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CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ADDRESSES AND ORIGINAL ARTICLES

The Work of the B.M.A. in Ireland. By Prof. T. GILLMAN MOORHEAD, P.R.C.P.I. 223

Dermal Strain of Vaccinia Virus Grown on the Chorio-allantoic Membrane of Chick Embryos. By Lieut.-Col. W. D. H. STEVENSON, F.R.F.P.S., and G. G. BUTLER, M.D. 228

Adolescent Hypertension with Excretion of an Adrenaline-like Substance in the Urine. By J. CLIFFORD HOYLE, M.R.C.P.—(*Illustrated*).. 230

Pathological Diagnosis of Female Gonorrhœa. By W. NEVILLE MASCALL, M.R.C.S. 233

CLINICAL AND LABORATORY NOTES

Bronchial Diverticulosis. By H. V. MORLOCK, M.R.C.P., and A. J. SCOTT PINCHIN, F.R.C.P.—(*Illustrated*)..... 236

The Use of Chloroform Capsules during Labour. By A. REES, L.R.C.P... 237

MEDICAL SOCIETIES

Pathological Society..... 238

International Pædiatric Congress.—The Nature of Allergy 239

International Society of Orthopædic Surgery.—Treatment of the Tuberculous Hip.—Congress Dinner..... 242

REVIEWS AND NOTICES OF BOOKS

The Duodenum. By Prof. E. L. Kellog, F.R.C.S. 243

Surgery of the Thorax. By T. H. Sellors, F.R.C.S. 243

Physiological Effects of Radiant Energy. By Prof. H. Laurens, Ph.D. 243

Holt's Diseases of Infancy and Childhood. Revised by L. Emmett Holt, Jr., M.D., and Rustin McIntosh, M.D..... 244

Journal of Pathology and Bacteriology 244

LEADING ARTICLES

DROPPING OUT OF MEDICAL BENEFIT 245

TUBERCULOUS BACILLÆMIA 245

THERAPEUTICS OF MALARIA 246

SURGERY OF THE BLADDER NECK..... 247

ANNOTATIONS

The Work of the Ministry of Health 248

Aortic Valvular Disease .. 249

Sidelights on Family Insurance 249

Abdominal Incisions..... 250

The Secretary to the Medical Research Council 250

Kitchener School of Medicine, Khartoum.... 250

Viscount Burnham 251

Milk-borne Disease 251

A Substitute for Calf Lymph 251

The Comfort Indicator.... 252

When is Abortion Justified? 252

BRITISH MEDICAL ASSOCIATION

PROCEEDINGS OF THE REPRESENTATIVE BODY

The Law Relating to Abortion.—The New Pensions Scheme.—Workers Passing out of Medical Benefit.—Vaccination.—Medical Education 256

SPECIAL ARTICLES

Measles Mortality. By DUNCAN FORBES, M.D., D.P.H. 253

Medicine and the Law: "Medical Officer of a Parish"—Income-tax on Professional Earnings Abroad 255

Vienna: Draft of a New Medical Act 261

PANEL AND CONTRACT PRACTICE

Psychotherapy.—The Capitation Fee 262

PUBLIC HEALTH SERVICES

London School-children.—Routine Medical Inspection 263

Infectious Disease in England and Wales .. 273

CORRESPONDENCE

Veterinary Education (Dr. O. Charnock Bradley).. 265

The Future of Medical Practice (Dr. J. H. E. Brock)..... 265

Blood Changes Following Irradiation (Dr. J. C. Mottram) 267

Lactic Acid as a Factor in Rheumatism (Dr. Drury Pennington) 267

"Endogenous" Tuberculous Infection (Dr. L. S. T. Burrell)..... 267

Sodium Evipan (Dr. M. A. El Moneim El Diwany) 268

Problems of Spinal Anæsthesia (Dr. W. Howard Jones) 268

The Royal Society Discussion on "Experimental Production of Malignant Tumours" (Mr. W. Sampson Handley, F.R.C.S.) 268

Heart Disease in Scarlet Fever (Dr. C. Bruce Perry)..... 268

PARLIAMENT

Notes on Current Topics: Road and Rail Traffic.—Royal Assent..... 269

House of Commons: Health Insurance Benefits.—Maternal Mortality.—Slum Clearance.—The Indian Medical Service.—Death-rate in Slums and Healthy Areas.—Housing in Liverpool 270

THE SERVICES

Royal Naval Medical Service.—Army Medical Services.—Royal Army Medical Corps.—Indian Medical Service.—Royal Air Force..... 271

MEDICAL NEWS

Univ. of London 272

Univ. of Wales 272

Royal College of Physicians of Edinburgh..... 272

Univ. of Edinburgh..... 272

Hospital Extensions..... 227

Donations and Bequests.. 236

Handbook of Tuberculosis Schemes..... 255

Univ. of Glasgow 271

Manchester Royal Infirmary 272

Royal Sanitary Institute.. 272

Univ. of Birmingham 272

Royal College of Surgeons of Edinburgh..... 272

Univ. of Liverpool..... 273

Queen's Univ. of Belfast.. 273

Univ. of Cambridge..... 273

British Pharmaceutical Conference 273

Scottish Conjoint Board.. 273

Developments at Middlesex Hospital 273

Albany Deptford Babies' Hospital..... 274

Medical Appointments in Iraq 278

INDEX NOTICE

THE LANCET, Vol. I., 1933 256

NOTES, COMMENTS, AND ABSTRACTS

Pharmacy in Retrospect and Prospect. By C. H. HAMPSHIRE, M.B., F.I.C. 275

Briskies..... 277

The Desoutter Artificial Leg—(*Illustrated*)..... 277

The Reduction of Noise in Buildings 278

New Preparations: Dettol 278

Appointments 274

Vacancies 274

Births, Marriages, Deaths 274

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THE WORK OF THE B.M.A. IN IRELAND*

BY T. GILLMAN MOORHEAD, M.R.I.A., M.D.DUB., P.R.C.P. IREL.

REGIUS PROFESSOR OF PHYSIC, TRINITY COLLEGE, DUBLIN

[Prof. Moorhead commenced his presidential address by disclaiming any intention to survey the history of the British Medical Association in Ireland in detail, but would recall to the audience the importance of the first meeting in Dublin in 1867. He said :—]

The president was the great William Stokes, and many other distinguished men of science attended. The great importance of this meeting was emphasised in an article which appeared in the *Journal* 20 years subsequently. The editor says :—

"The brilliant eloquence of Simpson and Smith, the weighty wisdom of Stokes, the gentle persuasiveness of Acland, the large statesmanship of Rumsey, the high-minded counsels of Stewart, gave to the proceedings of the Association a weight and force which have never been surpassed. But from that date and from that year the Association entered upon that new career of vigorous prosperity in which it has never faltered, and which has brought it to its present stage of phenomenal success. For the first time great development was given to its scientific aspects. It multiplied its sections, it created new opportunities of scientific activity, and it invited to its aid the youngest and most earnest workers in all the departments of medical science. That impulse was never lost."

This is high but justifiable praise. The meeting was undoubtedly an important one, in the first place because it was the symbol of a union of hearts between members of the medical profession in Great Britain and Ireland, a union which, in spite of political changes and developments, has never since been broken and remains steadfast to-day. But it was important in many other ways. It may be stated definitely that this was the first meeting at which the scientific business occupied a foremost place. At former meetings there were scientific discussions, but the main work at those meetings was of a medico-political nature. Now for the first time the scientific business was divided into sections, four in number—medicine, surgery, physiology, and obstetrics. Since then increasing specialisation has added more and more sections, and the end is not yet. Some may feel that the segregation of specialists in isolated groups is a mistake, but few will doubt that it is by specialisation that advances in real knowledge are for the most part attained. The Association made a forward step when it recognised this fact in 1867.

The Stimulus of the B.M.A. to Public Health Services

Further, the meeting gave an enormous stimulus to public health services, services which, indeed, at that time were almost non-existent. Stokes, in his eloquent inaugural address, prophesied an immediate development of State medicine, a development which is still proceeding, but which years ago, largely as a result of this meeting, attained a magnitude far greater than was ever dreamt of by Stokes. Rumsey also, a Cheltenham doctor, already well known for his advocacy of preventive medicine, made a special plea for the establishment of sanitary medical officers and for the appointment of medical men to carry out many other public duties, such as are now accepted among the commonplace and routine services established in every civilised community.

This meeting, in fact, may be regarded as having initiated the great change which has taken place since that date in the functions of the doctor. In 1867 the thoughts of the doctor were not, as Bacon puts it, "raised above common cures," but from henceforward they were to be turned to the subject of prolonging and renewing the life of man. The general practitioner, "the salt of the earth," as Barrie called him, is still the backbone of the profession. He is the true and valued friend of many a household. He is the standard by which the entire profession is measured, for to the vast majority of the public he represents all that is connoted by the name doctor. But in 1867 he was isolated, and his duties consisted solely in ministering to the relief of individual patients. Since then a revolution has taken place. No longer is he isolated but, as a member of a great coöperative system, he performs a new and more effective function. The public hardly realises how great has been the change, and the extent to which the doctor now enters into the general life of the community. There has developed a vast and complex service devoted to curative and preventive medicine, and to the preservation of the health of the community at large. In that service the general practitioner has many duties and many responsibilities undreamt of 60 years ago. A gratifying result of this system and of the way in which the general practitioner performs his duties is an all-round improvement in health, an increase in the expectation of life, and a greater enjoyment of life. For all this, as already stated, the Dublin meeting of 1867 may, to a large extent, be thanked, for it focused the attention of the profession and of the public upon urgent and vital needs. An early and almost immediate result was the establishment in the year 1870 of the diploma of State medicine in Dublin University. This was the first diploma of its kind in the British Commonwealth. As one looks to the future, one foresees a still greater extension of public medicine, and I for one look forward to a time when the simple laws of health will be more widely taught among and known by even the poorest inhabitants of our country, and when the State will compel everyone to obey those health laws.

Its Attitude Towards Medical Education

In addition to his advocacy of State medicine, Stokes in his address pleaded strongly for the scientific investigation of the action of drugs and other therapeutic measures, for apparently quackery was as rampant then as it is to-day. His plea is as necessary now as it was nearly 70 years ago. He insisted that if quackery in the profession were to be avoided it was essential that everyone entering the profession should receive a wide, liberal education. One is happy to think that such an education is now our common property, yet I venture to think that a greater grounding in inductive logic and in the laws of evidence would not be amiss. But the elimination of quackery ultimately depends on the education of the public. A country is said to get the Government that it deserves. On the whole, this country seems to me to get better medical services than it deserves, but it would get better still if it knew how to appreciate those services at their true value, and if it was better trained in distinguishing the false from the true. I would like to teach elementary logic in the

* Presidential address at the 101st Annual Meeting of the British Medical Association, Dublin, July 25th.

higher classes of every school in the country, and in the same classes to give short courses in elementary physiology and in hygiene. Such a training might help to remove the credulity which still believes in magic, and which enables the charlatan to flourish.

[Prof. Moorhead pointed out, quoting the opinions of several famous presidents of the Royal College of Physicians of Ireland, and of Sir Andrew Clark, that in medical education the fundamental idea should be to give the student a scientific outlook and a desire to learn. He continued :—]

Medicine should be taught as a whole. There has been too great a tendency of late to teach subjects in watertight compartments. My own view is that the General Medical Council is a sinner in this respect. It is not now possible to digress into a disquisition on the medical curriculum, but it will be agreed that a thorough knowledge of the early scientific subjects forms the basis of success as a medical practitioner. Realising, however, that the mental capacity of the average human being is limited, I agree with those who urge that, as far as possible, these subjects should be taught from a vocational standpoint, and with a view to illustrating broad scientific principles. An accomplished teacher will know what to eliminate, and, while showing the direct bearing of his subject on the ultimate lifework of the student, should be able at the same time to indicate the paths of research and of inquiry which lie open to those who are eager and to those who are capable of delving deeper into the subject. As regards clinical medicine, I somewhat deplore the recommendations of the General Medical Council that special courses of instruction should be given on so many specialties. At any rate, these special courses should have their corrective in the out-patient department, where patients not already labelled will be seen by the student, and where the habits of rapid diagnosis and of decision, in short of resource, may be acquired. In the out-patient department the student will see patients in exactly the same way as he will see them after qualification, whereas the systematic study of, for example, tuberculosis or venereal disease in hospitals entirely devoted to the treatment of such cases presents the patient from quite a different angle. Specialised courses are all-important as a means of post-graduate instruction when a student has already acquired a general grasp of the principles of his profession. I have never wavered from my view that all that we can do in the course of the medical curriculum is to instil a broad knowledge of principles. If we succeed in doing that, a student placed on his own responsibility is capable of continuing his education and of acquiring all the details which he requires with extraordinary rapidity. If he does not acquire the principles, he will never throughout his life attain to a position higher than that of a qualified quack, at the mercy of every wind that blows, and the servant of the vendors of those many proprietary preparations whose alluring advertisements assault our breakfast table. As I read through the reports of that first Dublin meeting I realise how fully those who were then gathered together had grasped the true meaning of education, and how great an impetus they gave to the realisation of their wishes.

The Salients of the Five Irish Meetings

[Prof. Moorhead outlined the progress in numbers and influence which had taken place when the Association for a second time met in Ireland at Cork under the presidency of Dr. Daniel O'Connor, professor of medicine in Queen's College, Cork, and then 80 years of age. This was the meeting at which Sir William Savory contended that Listerism was unnecessary, an attitude which the orator explained as "revealing the germs of the aseptic system." The proceedings at the next meeting in Ireland took place in Belfast in 1884, when the same developments in numbers and scope were registered, and an outstanding feature of the meeting was the inauguration of a special section of pharmacology and therapeutics presided over by T. J. Maclagan, famous for his connexion with the use of salicylates in rheumatism. Of the fourth meeting in Ireland, which was held in Dublin in 1887, 20 years after the first meeting, Prof. Moorhead said that the most remarkable occurrence was the address delivered by the Rev. Samuel Haughton, M.D. Dubl., on the relation between the Dublin slums and the high death-rate of the city. Haughton, he said, advised the construction of a main drainage scheme for Dublin, and drew a vivid picture of the then unsanitary state of the city and outlying suburbs. His words began to have immediate result, although it was only in 1931, 50 years later, that the slum problem could be tackled on comprehensive lines. Of the fifth meeting, held in 1909 in Belfast, Prof. Moorhead said that a memorable connexion with that gathering was the holding of the business in the Queen's College which had within the year attained to the status of an independent university. He continued :—]

The Poor-law Medical Service in Ireland

In the period of 42 years covered by these five meetings the science and art of medicine passed from mediaevalism into modernism. The British Medical Association played no unworthy part in this evolution, and Ireland can claim that largely as a result of those meetings it has been enabled to influence the policy and structure of this Association, and to contribute in no small measure to medical progress.

But the activities of the Association so far as Ireland is concerned were not confined to the holding of annual meetings. One of the most important chapters of its work is that which deals with its campaign in relation to the poor-law medical service and workhouse system. In order that the present position of the public medical services may be understood, and in order that the campaign may be seen in its true perspective, it is necessary briefly to refer to the establishment of medical relief agencies in Ireland. Prior to the year 1765 practically no provision existed in rural Ireland for the medical relief of the sick poor. In that year the Irish Parliament passed an Act which granted permission to the grand juries in each county to establish a county infirmary, and under this Act within the next 50 years infirmaries and fever hospitals were established in almost every county. These were an undoubted boon, and many of them are in existence to-day; but they left the main problem of medical attendance on the poor quite untouched, and as time went on it became apparent that further provision must be made for the aged and decrepit, and for the destitute sick. In 1838 the Poor-law Act was passed. This was modelled on the English Act of 1834, by which the system of workhouse relief was established. Under this Act nearly 160 workhouses were built, to each of which was attached an infirmary and a small fever hospital. Into the workhouses the poor and decrepit were admitted in large numbers, in spite of the unpopularity of the institutions, but the Act made no provision for attendance on the sick poor in their own homes, or for the treatment of minor ailments.

Experience soon showed that the workhouses were thoroughly unsatisfactory. Young and old, unem-

ployed and unemployable, blind, and lunatics were often herded together with the most demoralising results. Public opinion was slowly aroused, and in pursuance of its policy of endeavouring to promote the physical welfare and health of the nation, the British Medical Association decided, in 1895, to appoint a special commissioner to inquire into the system. Miss C. J. Wood, formerly lady superintendent of the Hospital for Sick Children, Great Ormond-street, was sent over, and after visiting several of the institutions made a detailed report. The medical officers attached to these institutions had no special grievance as far as salary or terms of appointment were concerned, but the institutions themselves left much to be desired. They were almost without exception prison-like structures, gaunt outside and dreary within, ill-furnished, and badly equipped as regards both comfort and even sanitation. At the time of Miss Wood's report the supply of trained nurses was totally inadequate—most of the nursing being done by the inmates themselves—and no provision whatever existed for night attendance.

In spite of unpopularity, however, the workhouse system continued to exist until the troubled times which preceded the signing of the Treaty of 1921. At the time when the Treaty was signed about 130 of these structures existed in the Saorstat, although many of them were no longer in use. Some of them had been burned, others had been occupied by troops. From the first, the provisional Local Government Board of Dáil Eireann was determined on their complete abolition and on the wiping away of the system for which they stood. There is little doubt that Miss Wood's report was largely responsible for bringing home to thinking people in Ireland in the year 1895 the evils of the unions, and that the action of the British Medical Association in sending her over was a factor in their final abolition. It will be pointed out later that the place of these unions has now been taken by a well-organised system of county homes and county hospitals, and by a system of outdoor relief.

The B.M.A. and the Dispensary Medical Officers

[Prof. Moorhead then described the campaign on behalf of the dispensary medical officers undertaken by the British Medical Association some 40 years ago. The inadequate pay of the officers had been the subject of comment for ten years previously, but in 1891 Ernest Hart took a personal share in bringing the situation before the Government, and for some years the columns of the *British Medical Journal* were open to the question. He continued :—]

In 1903 the Association determined to make a further effort on a big scale. In that year Surgeon-General Evatt, well known for his efforts on behalf of the Army Medical Services, retired from active work, and at the request of the British Medical Association he visited Ireland with the object of examining into, and reporting on, the conditions of the poor-law medical service. In the autumn of that year he issued an elaborate report in which he reviewed the working of the poor-law system as a whole. He endorsed the numerous complaints that had been made, and urged the medical officers to take bolder steps to remedy their grievances. This report produced a profound impression, and greatly strengthened the hands of those who were trying to influence the officials of the Local Government Board. A campaign of boycott was now inaugurated, under which certain dispensary districts when they fell vacant were left without a doctor—other than a locum tenent—owing to the pressure brought by the British Medical Association and the Irish Medical Association upon all of their members to refuse to apply for appointments which did not come up to a certain salary. A further step was the appointment in 1905 of an Irish committee of the British Medical Association, one of whose special functions henceforward was to inquire into and, as far as possible, deal with complaints made by dispensary doctors. This was followed in 1914 by the establishment of an Irish office with a full-time secretary. This office has been invaluable in looking after the interests of poor-law medical officers, and indeed all medical interests in the country. Through its efforts, and aided by the recommendations of a Viceregal Commission held in 1906, grievances have been removed one by one.

By the action of the Local Government Board the scales of salaries have been gradually raised, and a system of promotion on a moderate scale has been introduced. It was not, however, until the year 1919 that the principle of compulsory superannuation and of pensioning was made law (Local Government (Ireland) Act, 1919). Finally, by the Local Authorities (Officers and Employees) Act of 1926, a change of great importance in the method of election of dispensary doctors was brought about. Under this Act the appointment of dispensary medical officers was taken out of the hands of the county authorities and put in the hands of special commissioners. The qualifications of a candidate are now carefully considered by experts, and there is no doubt that under this scheme favouritism and jobbery have been done away with, and that, at any rate until quite recently, the dispensary medical officers have been appointed on an equitable basis. As already stated, there has never been any doubt as to the value of the system to those served. As far as the medical men are concerned I can best summarise the advance that has been made by quoting from an article which appeared in the *Supplement* to the *Medical Press and Circular* in August, 1931 :—

> "Dispensary doctors of the present day hardly realise what a reform has taken place in regard to their conditions of employment during the present century. It is only a few years since salaries were stationary, and retiring allowances were a matter of grace. These days are gone, and a young man now entering the public medical service in the Irish Free State can look forward to a life of useful and not uninteresting work, and not unfair remuneration. The younger men hardly recognise what a debt they owe to their immediate predecessors, working through the medium of the medical associations."

The National Health Insurance Act

In connexion with the National Insurance Act Irish doctors were active from the very moment that the text of the Bill was issued. Almost immediately the Irish committee of the British Medical Association took into consideration the proposals with regard to the application of the scheme to Ireland. The Irish Medical Association at the same time showed much energy, and was mainly responsible for the summoning of a mass meeting which was held in the Antient Concert Room, Dublin, on June 30th, 1911. At this meeting it was decided :—

> "That the Committee of Council of the Irish Medical Association and the Irish Committee of the British Medical Association be appointed an executive committee to look after the interests of the medical profession in Ireland in connexion with the National Insurance Bill."

From an early date it became apparent that the interests of the Irish profession and those of the

English profession were widely dissimilar, inasmuch as the Irish Parliamentary party recommended that Ireland should be excluded from medical benefit. This recommendation was adopted. Up to the present Saorstat Eireann has not included medical benefits, and only in 1931 were these benefits extended to Northern Ireland. In spite of this exclusion, the profession in Ireland stood shoulder to shoulder with the profession in England in the fight of the latter for fair conditions. At the very first meeting in Dublin it was decided to circularise Irish medical men urging them not to undertake medical duties in connexion with the Act in England until the British Medical Association was satisfied with the terms offered. Many Irish doctors also contributed at this time to the guarantee fund which was raised for the purpose of indemnifying those who might suffer pecuniary loss in their determination not to work the Bill. The victory which the Association won in England is now a matter of history. In Ireland the main struggle was to secure sufficient remuneration for sickness certification. This struggle lasted for some years, and was finally settled by the good offices of Dr. Addison, Dr. Macdonald, chairman of the Council, and Dr. Cox, secretary of the British Medical Association, who arranged an interview between Mr. Roberts, M.P., and representatives of the Irish medical profession in 1915. It was then agreed that the annual sum of £90,000 should be paid for certification in Ireland, and that the right of certification under the Act should be granted to all medical men in the country with an arranged capitation payment. After that date for many years certification was carried on under conditions satisfactory to all concerned.

Other Activities of the Association in Ireland

The other activities of the Association in Ireland are too numerous to be referred to in detail; indeed only a few of them can even be mentioned. But it may be stated that there has been hardly a single matter affecting the interests and welfare of the profession, and scarcely a matter of importance in connexion with public health, that has not received from time to time the most careful consideration from the Irish branches and divisions. Since the appointment of the Irish committee in 1905 the work of the Association has been systematised, while the establishment of an Irish office, with a full-time secretary, has added enormously to the influence which the Association has been able to wield.

As early as 1888 the Association showed its interest in medical teaching by advising the appointment of professors of pathology in all the Irish medical schools. Ten years later it showed a similar interest in bacteriology, and pressed for the establishment of a central bacteriological institute. In 1890 it joined with the Irish Medical Schools' and Graduates' Association in an emphatic protest against the exclusion of the holders of Irish degrees and diplomas from hospital appointments in England.

In the campaign on behalf of the personnel of the Army Medical Services the Irish members took a leading part, and there is little doubt that the influence they were able to bring to bear on newly qualified Irish doctors in restraining them from entering the Services until satisfactory conditions were conceded did much to bring about the necessary reforms. During the war an Irish emergency committee was organised, the main purpose of which was to obtain medical recruits for the army, a work in which it proved most successful. From time to time representations were made to suitable quarters on such matters as the medical inspection of school-children, the registration of midwives, the payment of fees to medical witnesses, the establishment of grades of salaries for prison doctors, the medical inspection of dairies, and many others. Lastly, as will be pointed out immediately, the Irish Medical Committee in 1919 made representations regarding the establishment of a Ministry of Health for Ireland. These representations were the first step towards that great development of the public health services which was initiated after the signing of the Treaty of 1921.

But this catalogue grows wearisome, and takes no cognisance of those intangible benefits which flow from that mutual goodwill and friendliness which professional coöperation induces. I have failed in my task if my hearers do not realise that the contributions of each country to the other in their combined work for the conquest of disease have been spiritual as well as material. The medical profession of the entire world is marching forward, inspired with a love of service and aiming at such perfection of our science and of our art as will in the end wipe away all sickness. In that onward march the professions of these two islands, mutually aiding one another, have taken a foremost and sometimes a leading place.

The Irish Medical Association and Affiliation

In most of its activities the British Medical Association has worked in conjunction with the Irish Medical Association. In June of this year the Irish Medical Association numbered just under 400, and the members of the British Medical Association resident in Ireland were nearly 11,000. Again and again it has been felt that in a small country like Ireland a single representative association would have greater weight in promoting the interests of the profession than two associations which, though friendly to one another, are to some extent competitive, and at any rate overlap in their activities. Various attempts at amalgamation have been made. The last of these was in 1919, when an influential committee was appointed to explore the question. After some months this committee reported in favour of amalgamation, and in favour of the formation of a single association affiliated to the British Medical Association. The amalgamation was, however, intended to apply to the whole of Ireland, but before the scheme could be discussed in detail political partition in Ireland had been brought about. As a result the matter was allowed to drop, but it appears to me that the time is now ripe for a reopening of the question.

From a scientific point of view the interests of doctors are probably identical everywhere, but conditions of service vary in accordance with the custom of the people and in accordance with legislative enactments. Since the passage of the Insurance Act the conditions of practice in England and in Ireland have been dissimilar. Of necessity much of the work of the Association deals with insurance problems which in no way interest or affect the Irish doctor. In consequence, many of the Irish profession are slow to join an Association whose work from their point of view is so largely devoted to matters with which they have no concern. An affiliation on broad lines would, I feel certain, prove of benefit to the Association as a whole, and to the Irish profession. I feel that such an Association would be widely supported, and would be genuinely representative. It may be

added that the establishment in 1926 of a separate *Medical Register* for the Irish Free State has to some extent already organised our entire medical profession.

Public Health Services in the Irish Free State

I will conclude this paper by a short reference to the recent development of public health services in the Saorstat, a development which had its beginning in representations made to the Government by the Irish Medical Committee. Since 1887, the date of the last Dublin meeting, our public health administration has, as in other European countries, developed into a regular network of associated and well-coördinated medical services. The main advance as far as Ireland is concerned has been in the last ten years. Dr. Stephenson, late chief medical adviser, Department of Local Government and Public Health, Dublin, in a recent pamphlet, says: "Public health reform has advanced rapidly in the Free State, perhaps more so than in any other country, yet the health schemes are laid on solid foundations, capable of expansion on definite and systematic lines." For this advance the forward-looking men in the Department of Local Government and Public Health are mainly responsible, but the primary stimulus is due to our Irish secretary. In 1919 Dr. Hennessy read an important paper before the Section of State Medicine of the Royal Academy of Medicine in Ireland. This paper was entitled "Ireland and a Ministry of Health," and foreshadowed a comprehensive scheme of public health services with central control.

At that date public health services occupied much attention following the establishment of a Ministry of Health in Great Britain, and in consequence the chief secretary was readily induced to receive a deputation of medical men, who urged the necessity of establishing a Ministry of Health suitably adapted to Irish needs. The Government, however, could not at that time be induced to establish such a Ministry. As an alternative it set up a public health council. This council issued an important report in 1920, in which it recommended:—

(*a*) The coördination as far as possible of the general central control of all the services relating to, or ancillary to, health, and the establishment of a Ministry of Health.

(*b*) The reorganisation of local health administration with a view to placing it as far as possible on a county basis.

(*c*) Reform of the poor-law medical services.

This report appeared at a time when Ireland was in the throes of a political struggle, and when medical and other public services were greatly disorganised. In consequence, no governmental action followed its issue, and before long the Council ceased to function, and was finally dissolved by the Local Government Act of 1925.

Nevertheless, this report formed the basis for the future development of the Irish services. After the Treaty was signed, and the period of civil strife which followed, the executive council of Saorstat Eireann adopted many of its recommendations. By Acts passed in 1924 and 1925 all the medical services were concentrated in one department of the Local Government Board, with the result that enormous simplification and coördination of public health work has been brought about. As already stated, the workhouse system was swept away in the early revolutionary years. In its place there has now been established in each county in Ireland a well-equipped county hospital with a full-time medical officer and suitable assistants, and one or more county homes. The homes house those aged and infirm who, without friends or relatives to support them, require the succour of the State. In each county hospital the main surgical work of the county is carried out. When these hospitals were first established it was feared that the city hospitals would lose many country cases and that their teaching capacity would in consequence be impaired. Time has shown, however, that this fear was groundless. The county hospitals indeed deal with the great bulk of what I may call routine surgical work, but there is still an abundant flow of difficult cases from all parts of the country to the teaching institutions.

In each country a full-time medical officer of health has been appointed, who is responsible for all matters of public health in his county. To him the dispensary medical officers report regarding the health of their district. Specialist services have not been neglected. Ophthalmic surgeons visit the main towns according to a definite plan. School inspection work and schemes for child welfare have also been developed, while in each county schemes for the treatment of venereal disease and for tuberculosis, with domiciliary visitation, have been adopted.

It is unnecessary to go into further details, but it is clear that, as far as Ireland is concerned, a great step forward has been taken in the last ten years in connexion with public health. Only a person resident in the country can realise how great the advance has been, and how great an improvement the new order is compared with the old. The Department of Local Government and Public Health, in pursuing its policy, has wisely realised that education of the public must precede reform, and so thorough have been its methods of instruction that practically every forward step has been made with the concurrence and goodwill of the county councils, who are responsible, and of the people generally.

Ireland has still far to go, but it is advancing resolutely. Before long it will be in the very forefront of civilised races so far as the care of its people is concerned. In its future struggle this meeting of the British Medical Association will prove a stimulus and an aid. It comes at the beginning of an epoch in our development. Perfection is not attainable, for as the goal is approached new problems ever arise, but Ireland is travelling hopefully, and to do that is better than to arrive. Its desire is not merely for the physical needs of its people, but for their spiritual development.

> "I looked: aside the dust cloud rolled,
> The Warrior seemed the Builder too,
> Upspringing from the ruined Old,
> I saw the New!"

HOSPITAL EXTENSIONS.—A children's ward has been added, at a cost of £1200, raised by public subscription, to Selby War Memorial Hospital, in memory of the late Dr. George D. Todd, who practised in Selby for half a century and was greatly interested in the hospital. The ward was opened by his widow, who also unveiled a memorial tablet. It forms part of a new wing, the cost of which has been defrayed by the Mellanby Trust.—Lieut.-Colonel C. F. Milward, chairman of the Worcestershire county council, has opened a new wing of Evesham public assistance institution, comprising four wards with 72 beds placed around a turfed and shaded quadrangle. The infirmary will now serve the whole of South Worcestershire.—The Parkhurst (Isle of Wight) public assistance institution has been enlarged by the addition of a maternity pavilion which contains nine beds and the usual appurtenances, and has cost £2500.

DERMAL STRAIN OF VACCINIA VIRUS GROWN ON THE CHORIO-ALLANTOIC MEMBRANE OF CHICK EMBRYOS

A POSSIBLE LARGE SCALE PRODUCTION OF A BACTERIA-FREE VIRUS

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(*From the Government Lymph Establishment*)

A. M. Woodruff and E. W. Goodpasture [1] published a paper on the Susceptibility of the Chorio-allantoic Membrane of Chick Embryos to Infection with Fowl-pox Virus and later, in collaboration with G. J. Buddingh,[2 3] described a method of cultivating vaccinia virus in the same membrane. Using this method with certain simplications of technique we have been able to infect with vaccinia virus a large proportion of suitable eggs. The work continues, this being a preliminary note.

The authors mentioned have begun usually by infecting the chorio-allantoic membrane with a strain of virus that may be called neuro-testicular (Levaditi's neuro-vaccine passed through the testis of a rabbit). In most of the methods used for the cultivation of vaccinia virus a pure dermal strain has not been used as an initial inoculum on account of the difficulty of ensuring freedom from contaminating bacteria, so that neuro-vaccines, testicular strains, or dermal strains passed through rabbits' testes are most commonly used. We do not discuss whether the use of such strains is advisable; we have been fortunate in being able to initiate our cultivations with purely dermal strains, and it will be acknowledged that such are preferable in every way.

Ledingham and McClean [4] have reported that small quantities of a dermal strain can be collected entirely free from bacteria. The method which we have adopted is as follows. We have commenced with our own glycerinated vaccine lymph derived from the calf, which experience has shown to give satisfactory results: with such lymph diluted 1 in 20 with physiological saline we have injected rabbits intradermally and obtained good papules from which the initial inoculum is collected on the fourth day. The rabbit is killed and, with aseptic precautions, the skin is incised over cauterised lines well away from the papules so that it may be reflected back over a wooden support shaped like a darning mushroom: after the connective tissue has been dissected away slightly the papules are incised without entire penetration of the skin and then, with some scraping, small amounts of exudative material are collected which, if proper precautions are taken, are found to be sterile; this material is now diluted to a very small degree with 0·85 per cent. sodium chloride solution (about two to three parts of the exudate to one part of saline solution) and then pounded very gently with a glass rod. The clearish supernantant fluid is used as an inoculum and on one occasion was titred out intradermally on another rabbit and gave a small papule in 1 in 1000 dilution. It is better, we think, if some small flocculi of tissue material are present in it. Several eggs can be inoculated with the papular exudate of one rabbit, though we have found that the resulting infection may be slight if it is diluted too much. We are inclined to think that the first passage on the chick membrane is more likely to result in slight infections with a tendency to the formation of isolated papules than later infections by passage from one chick membrane to another. We have carried out a series of infections in this manner up to the fourth generation without any indication that the virus is losing its potency as a result of continued growth on the chorio-allantoic membrane.

As our initial inoculum differs from that employed by Woodruff, Goodpasture, and Buddingh, and our present technique is simpler, perhaps a short description is advisable both of the technique and of the naked-eye appearances of the resulting lesions.

TECHNIQUE

Fertile eggs after 10 to 11 days' incubation have been chosen. The air sac is marked off with a pencil and an area chosen and marked over what appears to be, by transmitted light, the membrane of the embryo in such a position as to be well within the shadowed portion but yet away from the darkest area, which indicates probably the position of the head. The egg is now placed on a stand so that the air sac end is submerged in a water bath at 38° C. to 40° C. as practised by E. R. Clark.[5] The shell over the chosen area is well rubbed with alcohol and allowed to dry. Disinfection of the shell with tincture of iodine can also be carried out with safety; we have also on some occasions flamed the small selected area, but we consider this may be dangerous to the life of the embryo. All instruments are dipped in alcohol and flamed. With the sharp point of scissors or scalpel a small hole is drilled in the shell, avoiding, if possible, damage to the shell membrane; very often however this membrane is perforated and the chorion exposed and even damaged, as evidenced by a slight trace of blood, but these events do not seem to prevent the embryo surviving. If the shell membrane is not perforated during this procedure it is incised, but no attempt is made to damage the chorion by pricking in the manner advised by Woodruff and Goodpasture, for we found that death of the embryo may be caused thereby. The inoculum is drawn up into a sterile fine capillary pipette and a column of about 1 to 1·5 inches injected below the shell membrane obliquely on to the surface of the chorio-allantoic membrane, when often it may be noticed that the movements of the embryo actually suck in any of the inoculum that may be left at the margin of the hole. The shell opening is then closed with melted hard paraffin—sterile and not too hot, and near to the point of solidification. We have found that this method of closing the aperture is most satisfactory, although we have had success with mica discs sealed down with a mixture of resin and beeswax, and with collodion discs. The eggs are then dried, marked with identification numbers and dates, and returned to the incubator, and thereafter are turned morning and evening and allowed to cool off every day for 15 minutes. Incubation is continued for four days, after which the eggs are opened in the following manner: the upper third to half of the egg towards the more pointed end is dipped in alcohol and flamed and the shell opened aseptically in that area; the chorio-allantoic membrane is then incised with scissors and the contents within that membrane may then drop out or be drawn out with forceps fairly easily, leaving as a rule the chorio-allantoic

[1] Amer. Jour. Path., 1931, vii., 209.
[2] Science, 1931, lxxiv., 371.
[3] Amer. Jour. Path., 1932, viii., 271.
[4] Brit. Jour. Exp. Path., 1928, ix., 216.
[5] Science, 1920, li., 371.

membrane attached within the shell, from which it can be separated with ease. This procedure, if carried out aseptically, results in a growth of virus free from contaminating organisms, as repeated sterility tests have shown; in one case, however, in some undetermined way, contamination did result, and this incident indicates that at every step the most rigid precautions must be practised.

NAKED-EYE APPEARANCES

Eggs opened 20 to 24 hours after inoculation show, if the chorio-allantoic membrane is spread out under water, a distinct though slight opacity over areas which correspond in position and size with areas of definite papular growth in eggs of longer incubation. After 44 to 48 hours the affected area is distinctly swollen and opaque with, in some cases, pinpoint markings of distinct white or yellow colour scattered throughout. By the fourth day the growth varies considerably in extent in different eggs, even with the same inoculum. Rarely there may be a simple papule of the size of a small pea, raised and translucent, white or yellowish, with a small area of membrane not markedly thickened round it but more opaque than the normal membrane, which is quite clear and translucent. It is a common experience to find areas of approximately 1 inch by ½ inch of confluent papules showing a tendency to umbilication here and there, so that the area is opaque, thickened, and greyish, contrasting markedly with the healthy membrane. At the margins small isolated papules may be present. Occasionally, and we think especially with the first passage on the chick embryo membrane, isolated papules scattered here and there are met with alone. There appears to be some congestion of the underlying allantoic vessels; the growth, however, as far as we have observed is, to the naked eye, on the chorion side and towards the shell membrane. It is interesting to recall that the chorio-allantoic membrane of the chick consists of ectoderm next the shell membrane, below that of mesoderm carrying the allantoic vessels, and below that again of a layer of entoderm lining the allantoic cavity; we believe that nervous tissue does not develop to any extent in the chorio-allantoic membrane. On one occasion we met with an infected area which showed quite an unusual congestion with hæmorrhages so far as our experience goes; part of this has been kept for examination, but as the pooled vaccine lesions from this and other normally developing vaccine lesions was not bacteria-free, it is possible that the virus itself was not responsible for the condition observed. Our experience in general is that the infected area is not hæmorrhagic, and this contrasts with the findings of Woodruff, Goodpasture, and Buddingh, when using a strain derived from neuro-vaccine. We have never seen the embryo affected.

LARGE SCALE PRODUCTION

We have used for the production of a large quantity of chick vaccine lymph an initial inoculum of the first passage on chick membrane. Unless the material from a large number of dermal papules on the rabbit were collected it would not be possible to obtain sufficient infective material to inoculate a large number of eggs. Accordingly we commence by inoculating the rabbit intradermally with a diluted calf lymph. The material is collected on the fourth day, is examined for sterility and perhaps potency, and is then inoculated into a first series of fertile eggs—a few in number. These are opened four days after inoculation and the material—a first passage on chick membrane—is collected. It may be at once ground up with saline solution, approximately 1 in 10, and used successfully as an inoculum, or, as in the large scale production experiment we have carried out, the first passage material, after storage in its original condition in 50 per cent. glycerin and water in the cold room at approximately −10° C. for just over two months, is washed in two changes of sterile water to get rid of much of the glycerin and then ground up with sterile physiological saline solution, approximately 9 volumes to 1 volume of material.

While the material to be used as an inoculum was being prepared two groups of eggs were being incubated. On the tenth day of incubation they were divided into two groups. *Group 1:* 19 eggs were inoculated, the openings closed with hard paraffin, and then incubated four days. They were then opened aseptically. Twelve showed good infection with the virus—nine a very heavy infection. Of the remainder, six eggs should not have been inoculated, as, from their size, the embryos must have been dead before inoculation. One apparently had died as a result of the operation. From 11 eggs the infected areas removed by scissors from the rest of the membrane, after a slight washing in sterile water to get rid of any yolk adherent, were weighed; approximately 10 per cent. was allowed arbitrarily for adhering water; after this deduction the weight was 18·3 g. *Group 2:* Nineteen eggs, after a similar period of incubation following inoculation, were also opened. Seventeen were found infected and the infected material, after deduction of 10 per cent. for adhering water, weighed 17·8 g.

The material was then treated exactly as the calf vaccinal material is treated in our routine work. It was ground down in a modified Chalybaus machine with four times its weight of 50 per cent. glycerin in distilled water and 0·01 per cent. clove oil. From these 28 eggs, therefore, 36·1 g. of material were collected. Now, 1 g. of calf vaccinal material is calculated to be sufficient to vaccinate about 200 persons, so that if the chick lymph were of similar potency as the calf lymph we estimate that over 7000 persons could have been vaccinated by the product from these eggs.

STERILITY AND POTENCY

The chick material as prepared with glycerin was investigated as regards (*a*) sterility, (*b*) potency.

(*a*) *Sterility.*—Both prepared lymphs were sterile (two days at 37° C. followed by one day at room temperature). 0·1 c.cm. amounts mixed with agar in plates were examined. Also streak examinations were carried out on prepared agar plates. Further, 0·1 c.cm. of each was examined in cooked meat media (Robertson's bullock heart medium) under strict anaerobiasis and proved sterile.

(*b*) *Potency.*—Potency tests by scarification methods showed that they produced quite comparable results on rabbits to those given by a good strong calf vaccine lymph, and gave characteristic appearances. The potency results gave readings of a confluent infection in 1 in 1000 dilution and five to seven vesicles or papules in 1 in 10,000 dilution in normal saline solution.

IMMUNITY

Immunity experiments showed that when this chick membrane vaccine lymph was diluted 1 in 100 with saline solution and applied to scarified skin areas of rabbits previously immunised by calf vaccine lymph (by the scarification method) no infection resulted. Control applications of the same dilutions of calf vaccine lymphs applied to these rabbits

behaved in a similar manner. Again, when mixed with immune serum in suitable proportions (from a rabbit immunised by intravenous inoculation of rabbit epidermal virus) in the presence of complement, the two chick groups behaved exactly like two calf lymphs. When injected intradermally into a rabbit they produced no results, while the same chick and calf lymphs, untreated or treated with normal non-immune rabbit serum in similar proportions, gave good papular reactions from 2 to 4 mm. in diameter—readings taken on the third, fourth, and fifth days after inoculation.

SOME CONCLUSIONS

Some work remains to be done on the identity of the virus although the experiments described above leave little doubt as to its nature. Further, before one can say it has reached the stage for trial on human beings, the effects on animals and especially on monkeys (the latter according to Gins being the best animal to test the question of power of generalisation of vaccinia virus) must be carefully watched. The effect of the chick membrane virus, as we may call it, must be as potent in immunising properties and as harmless so far as secondary effects are concerned as that of calf vaccine before it can be considered fit for human trial. Meanwhile, it is permissible to point out that so far as our experiments indicate, as Woodruff and Goodpasture and Buddingh hoped, a vaccine may be produced at little expense absolutely free from contaminating micro-organisms, and one that apparently produces on the rabbit lesions comparable to those produced by calf vaccine, and, so far as observed, non-hæmorrhagic.

Perusal of the Bulletins Mensuel of the Office International d'Hygiène Publique and of other health publications reveal how widespread is the desire to obtain a vaccine lymph free from extraneous organisms and yet of such potency as will produce characteristic vaccine lesions in human beings; of late, experiences abroad have intensified that demand.

The labour involved in producing a calf vaccine sufficiently free from contaminating organisms for use on human beings is very great, and the result is never a sterile vaccine but a vaccine free from pathogenic, and sufficiently free from non-pathogenic, organisms to accord with the Therapeutic Substances Regulations. The result is a safe vaccine but produced at a considerable cost of money, labour, and constant vigilance, and one that is always open to criticism.

There are two subsidiary points it may be of interest to note:—

(1) The chick membrane virus retains its potency at least two months in glycerin if kept below 0° C.

(2) Our experience is that, unless interfered with deliberately, chicks usually hatch out from the inoculated eggs at maturity, and healthy chicks result. Examination of the membranes left in some of the hatched egg shells show that the membranes really were infected—in some cases heavily so. Actually from 21 inoculated eggs permitted to mature, 21 chicks have hatched out. Two died subsequently, but it should be noted that they were reared under necessarily artificial conditions. This experience contrasts markedly with the findings of Woodruff, Goodpasture, and Buddingh, who state that infected chick embryos usually die on the fourth day after inoculation. This may be due possibly to the difference in the strains of virus employed—in our case, dermal; in their case, neuro-testicular. We would add, however, that when eggs are opened on the fourth day after inoculation, very occasionally a dead embryo has been found—presumably as a result of the operation or from the infection; for example, out of three series totalling 49 inoculated eggs opened, two were found to contain dead embryos.

We wish to acknowledge the assistance given us by the staff of the Government Lymph Establishment.

A CASE OF
ADOLESCENT HYPERTENSION
WITH EXCRETION OF AN ADRENALINE-LIKE SUBSTANCE IN THE URINE

By Clifford Hoyle, M.D., M.R.C.P. Lond.

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The following case provides an example of high blood pressure occurring in adolescence and accompanied by the copious excretion in the urine of a pressor substance related physiologically to adrenaline.

CASE RECORD

The patient was a boy, aged 14 years, who came under observation because he was found to have a systolic blood pressure of about 200 mm. Hg during a routine medical examination at school. He was seen by Dr. John Parkinson, who admitted him to the cardiac department of the London Hospital for full investigation. He did not complain of any symptoms, though he had always been pale and for a year or two had thought that vigorous exercise made him more short of breath than his schoolfellows. He played the usual school games, and was a few months under the average age of his form. His previous medical history had been uneventful, the only illnesses being measles at 2 years, doubtful chorea at 7, and chronic tonsillar enlargement requiring tonsillectomy four years ago. The family history was traced for two generations back, but it proved irrelevant. The boy's father had died three years previously from a carcinoma of the lung verified by autopsy; his mother, aged 50, and two brothers, aged 25 and 22, were all in good health.

GENERAL EXAMINATION

The patient was a pale, but well-developed, intelligent and coöperative boy, weighing 45·5 kg. and measuring 5 ft. 2 in. in height. His mental and physical interests were normal for his age, and he was neither unduly nervous nor emotional. The development of head, trunk, limbs, and external genitalia was proportionate, as was the distribution of subcutaneous fat and hair. Examination showed no abnormality in the lungs, abdomen, or central nervous system. The pupils were of moderate size in shade and reacted normally. Tremor was never noted; all the deep and superficial reflexes, including the palatal, were normal.

There was, however, ample evidence of cardiovascular hypertrophy. His arterial blood pressure when first admitted to hospital was: right brachial, 150/105 mm. Hg; left brachial, 160/120 mm. Hg; right femoral, 180/110 mm. Hg; left femoral, 210/125 mm. Hg. Repeated readings during rest showed that the blood pressure varied considerably, even within short periods of five or ten minutes. Sometimes it reached a normal level, but this was exceptional, and during the two years he was under observation the average blood pressure remained at about the same abnormal level. Both radial arteries, and both brachial, facial, dorsalis pedis, and posterior tibial arteries were easily palpable and unduly thickened. The retinal vessels and fundi appeared normal. There was no

superficial collateral arterial circulation as in congenital stenosis of the aortic arch. An unduly forcible arterial pulsation was present in the suprasternal notch even at rest, and the apex-beat was also abnormally forcible and situated 4 in. from the mid-sternal line in the fifth left intercostal space. The first sound at the mitral area

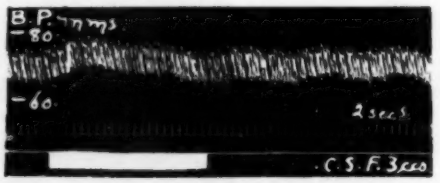

FIG. 1.—Cat. Pithed. Artificial respiration. Carotid blood pressure. 3 c.cm. cerebro-spinal fluid from patient.

and the second aortic sound were both accentuated. No murmurs were heard. The pulse-rate at rest was usually between 70 and 80, but varied with the blood pressure and at times rose to about 100. No evidence of congestive heart failure was present at any time during observation.

SPECIAL EXAMINATIONS

A teleradiogram showed enlargement of the heart as a whole, and particularly of the left ventricle. Rösler's sign was absent. An electrocardiogram was physiological. On many occasions the urine was found to be of normal specific gravity and the quantity passed while under observation in hospital was normal for his age. A cloud of albumin was sometimes present, but casts, blood, or pus were not found. His blood-urea was 0·028 per cent., and the excretion of phenolsulphone-phthalein and the standard clearance of urea were both normal. A blood count did not show polycythæmia and was normal apart from reduction of the hæmoglobin percentage to 75. The blood Wassermann reaction was negative. The visual fields were normal. Stereoscopic radiograms of the skull showed no abnormality; the pituitary fossa measured

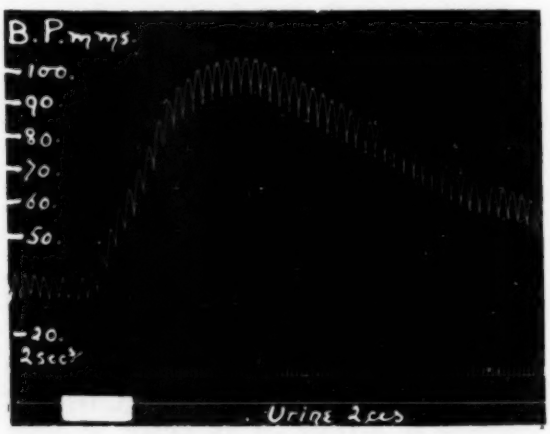

FIG. 2.—Cat. Pithed. Artificial respiration. Carotid blood pressure. 2 c.cm. urine from patient.

10 × 8 mm. The fasting blood-sugar was 0·087 per cent. and a glucose-tolerance test gave a normal response. Lumbar puncture showed the cerebro-spinal fluid pressure to be 60–65 mm., with free pulsation and a positive Queckenstedt phenomenon to a pressure greater than 220 mm. Twenty-five cubic centimetres of fluid were removed without any change in blood pressure during the following eight hours. The fluid had a normal content of cells and protein (0·06 per cent.) and the Wassermann reaction was negative.

From this it will be seen that the clinical and aboratory investigations failed to throw any light upon the origin of the hypertension beyond excluding chronic renal disease, congenital stenosis of the aortic arch, and those gross endocrine disturbances which occur in association with medullary [1-3 4 etc.] or cortical [5-8 9 etc.] tumours of the suprarenal glands, or basophilic tumours of the pituitary.[10]

PHARMACOLOGICAL STUDIES

The further investigation of this problem was begun by an examination of the cerebro-spinal fluid for pressor activity. Several tests were made in which 3–5 c.cm. of the C.S.F. obtained by lumbar puncture were injected intravenously into a pithed cat. Although the blood pressure in such an experimental animal is low, and therefore the conditions are favourable to the detection of any pressor substance, all the tests with C.S.F. from this

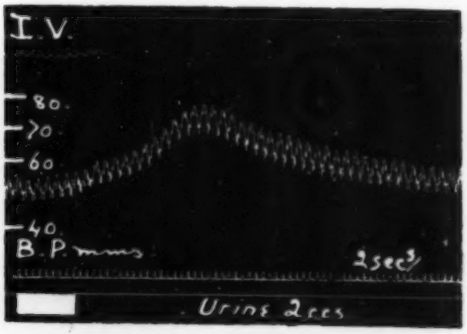

FIG. 3.—Cat. Pithed. Artificial respiration. Intestinal vascular volume (I.V.) and carotid blood pressure. 2 c.cm. urine from patient.

boy were completely negative. Fig. 1 shows a typical result; the trivial rise of pressure was only such as could be attributed to the volume effect of the fluid injected.

This result made it improbable that there was any pressor substance present in the C.S.F. which was producing the high blood pressure by effecting its physiological action in the body. The possibility that the posterior lobe of the pituitary might be concerned was, however, further investigated by testing the C.S.F. for melanophore expanding action in the frog according to the technique described by Hogben and Winton.[11] A typical experiment is given in the following protocol.

Protocol.—Sixteen pale frogs previously kept for 24 hours in a light room in dry tank on white background. Matched in pairs of identical colour, and placed in eight separate jars. All frogs weighed between 20 g. and 22 g. In jars 1, 2, and 3, one frog in each was injected intraperitoneally with 1 c.cm. C.S.F. from patient, and other with 1 c.cm. Ringer's solution as control. In jar 4, one frog injected intraperitoneally with 1 c.cm. C.S.F. from control patient A.T. (? syphilitic mediastinitis), and other with 1 c.cm. Ringer's solution. In jars 5 and 6 one frog in each injected intraperitoneally with 3 c.cm. C.S.F. from patient A.T., and other with 3 c.cm. Ringer's solution. In jars 7 and 8 one frog in each was injected intraperitoneally with one-fifth and one-tenth of an international pressor unit of pitressin in 1 c.cm. Ringer's solution, and the respective controls with 1 c.cm. Ringer's solution. After injection, all frogs kept in a light room on a white background. Results of test taken one and two hours after injections; only frogs which showed any colour change were those two in jars 7 and 8 which had been injected with pitressin. Both these had assumed an almost black colour one hour after injection. Microscopical examination of web of foot in each frog confirmed naked-eye results; melanophore cells contracted

in all frogs except in two which had received pitressin, where they were fully expanded.

The melanophore test for pituitrin is probably more sensitive than the pressor test, and also is believed to be specific for the active principle of the posterior lobe of the gland. These negative results with the C.S.F. strongly suggested, therefore, that hyperactivity of the posterior lobe of the pituitary could be excluded as an explanation for the high blood pressure.

Further investigation was then made to determine whether any pressor substance could be detected in the urine. On some 20 separate occasions during a period of two years, fresh unconcentrated specimens of urine from this boy were tested for the presence of pressor substances by intravenous injection into pithed or urethanised cats. On every occasion a considerable rise of blood pressure was found to occur in the experimental animal, although the

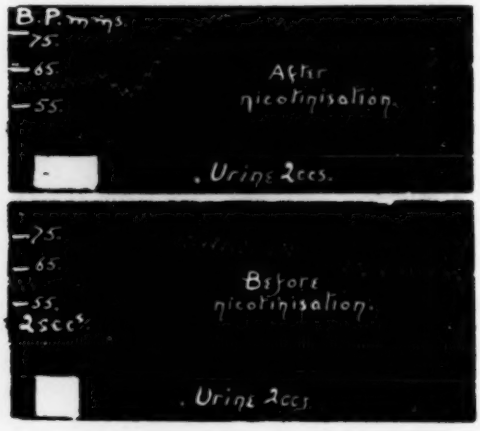

FIG. 4.—Cat. Pithed. Artificial respiration. Carotid blood pressure. 2 c.cm. urine from patient. Before and after complete nicotinisation.

extent of the rise varied from time to time. Fig. 2 shows how marked was the effect sometimes obtained. The character of the rise in blood pressure was similar to that which occurs with adrenaline and other pressor bases, and was accompanied by tachycardia. In further experiments the rise of pressure was found to be due to peripheral vasoconstriction; Fig. 3 shows the result of a typical experiment in which the rise of blood pressure was accompanied by a decrease in the intestinal vascular volume. Complete nicotinisation of the experimental animal in order to paralyse ganglion cells did not affect the pressor action (Fig. 4), but complete paralysis of the vasomotor myoneural junctions by ergotoxine resulted in a typical "reversal" effect with a fall of blood pressure similar to that which occurs with adrenaline.[12] This is shown in Figs. 5 and 6 where the action of adrenaline and the patient's urine are compared after complete ergotoxinisation of the experimental animal. The substance must, therefore, stimulate both vasoconstrictor and vasodilator nerve-endings as adrenaline is known to do.

The patient's two brothers were also investigated. Both were found to have a blood pressure at the upper limit of normal or slightly above, but without definite evidence of cardiovascular hypertrophy, either clinical or on radiographic examination of the heart and aorta. Their urines were tested for pressor substances on several occasions, but with negative results. Fig. 6 shows the results of a typical experiment in which the effects of intravenous injections of 2 c.cm. of urine from the patient and from each of his two brothers are compared in a pithed cat before and after complete ergotoxinisation.

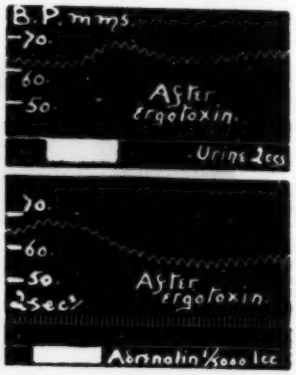

FIG. 5.—Cat. Pithed. Artificial respiration. Carotid blood pressure. Complete ergotoxinisation. Adrenaline 1 c.cm. 1/5000, and 2 c.cm. Urine from patient.

DISCUSSION

These investigations show that this patient, who had a persistent arterial hypertension during adolescence, was excreting in his urine considerable quantities of some pressor substance with a physiological action upon the cardiovascular system similar to that of adrenaline and allied pressor bases. The urine produced a considerable rise of blood pressure upon intravenous injection into experimental animals and this was shown to be due to stimulation of vasoconstrictor nerve-endings. It seems likely that such excretion of a pressor substance in the considerable quantities found bears directly upon the cause of the hypertension in this boy. Numerous control observations upon normal urines and urines of other patients with high blood pressure never showed any pressor effect. Normal unconcentrated urine usually produces a fall of blood pressure upon injection due to the potassium salts which it contains, as was pointed out by Humphry and Dixon.[13]

Nevertheless, it has long been known that minute traces of some pressor substances are normally excreted in the urine,[14–17] and Bain obtained evidence to show that their excretion is sometimes diminished in high blood pressure, particularly when gout and chronic renal disease are accompaniments. Such substances are present in so small an amount however that their detection requires that the urine be concentrated many times, and that the concentrate be tested for pressor activity. Abelous and Bardier [14] found that the minimum dose of extract which was required to produce any rise of blood pressure in the dog corresponded to 100–150 c.cm. of urine, and almost always in their experiments three to ten times this quantity was used for each test. Barger and Walpole [15] were unable to obtain sufficient of the pressor base in normal urine for identification, although they evaporated 30 litres. Bain [16 17] used injections of 2–3 c.cm. of an extract of which 6–10 c.cm. corresponded to 2½ litres of urine. It is clear that the excretion of the pressor substance in the present patient's urine is of an entirely different order from that dealt with by these former observers, and must be at least several hundred times greater.

There is, however, one previous account in the literature of a patient with high blood pressure in whom the unconcentrated urine was found to contain considerable quantities of a pressor substance. This was a case of acromegaly with cardiovascular hypertrophy recorded in 1910 by Humphry and Dixon.[13] They concluded that the pressor substance most probably belonged physiologically to the group of

pressor amines, so that their patient and the one recorded here would seem to be similar in so far as hypertension in both was associated with the excretion in the urine of some member of this group of substances. In both cases the pressor substance appeared in the urine in quantities of approximately the same order.

There are many possible explanations to account for the high blood pressure in the present patient in view of the results of the investigations. Tigerstedt and Bergman [18] and others [19–22] have described

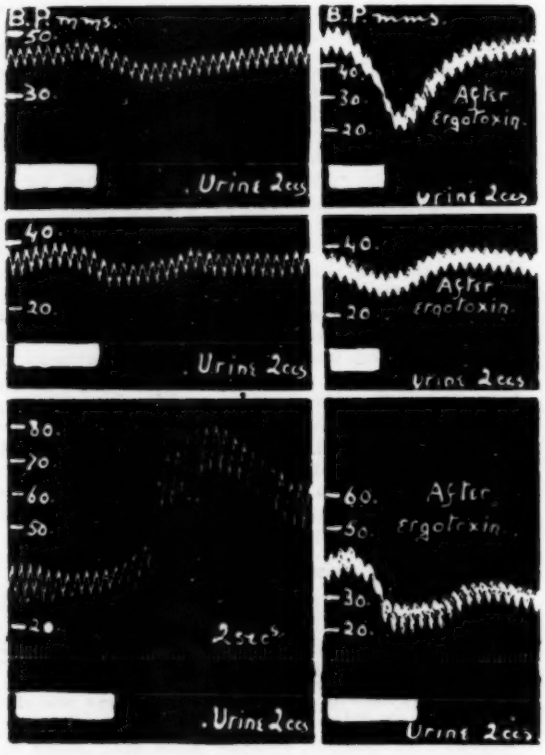

FIG. 6.—Cat. Pithed. Artificial respiration. Carotid blood pressure. Before and after complete ergotoxinisation. The two upper and two middle sections show effect of 2 c.cm. urine from patient's two brothers. The two lower sections show effect of 2 c.cm. urine from patient for comparison.

the recognition of a pressor substance to be found in extracts made from kidney tissue, and although this is not a special property of renal extracts [19 23] it has been claimed that this substance, "Renin," may be concerned in producing high blood pressure when this follows damage to the kidneys, as in nephritis. But in the present patient there was no evidence of this or of functional impairment of these organs. Probably, therefore, the pressor substance was merely appearing in the urine as a result of excretion by the kidneys, and was being manufactured elsewhere in the body. From what other source it may be derived is not known. One explanation would be an abnormality of metabolism analogous to pentosuria, cystinuria, or alcaptonuria, but with the unfortunate sequel that the abnormal metabolite happens to be a vasoconstrictor substance.

SUMMARY

A case of adolescent hypertension is described in which considerable quantities of a pressor substance were excreted in the urine. The pressor substance was shown to be related to adrenaline physiologically in that it stimulated vasomotor nerve-endings. It is suggested that the patient may be an example of high blood pressure resulting from an acquired or inborn error of metabolism.

The investigations were made while working as Medical First Assistant to the London Hospital and as Gillson scholar of the Society of Apothecaries.

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THE PATHOLOGICAL DIAGNOSIS OF FEMALE GONORRHŒA

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THIS paper shows the relative values of the various pathological tests employed in the diagnosis of female gonorrhœa.

The results of investigations, performed on the first attendance of the patient, are analysed in 500 consecutive cases of gonorrhœa definitely diagnosed by means of: (1) smears; (2) cultures; (3) the gonococcal complement-fixation test of the blood-serum. These three pathological methods are used as a routine at the London County Council clinic at Whitechapel, and no case is labelled with such a serious diagnosis as gonorrhœa unless or until pathological tests have proved the presence of the gonococcus; clinical findings alone are insufficient.

SMEARS

These were taken from both the urethra and the cervical canal and were stained with Jensen's modification of Gram's stain. Methylene-blue is not employed because it does not differentiate the mixed organisms which are so abundant in smears from female cases. Table I. shows the analysis of the positive results obtained by smears from the urethral and cervical sites, and the percentage that would

have been missed had only one site been examined. Forty-nine (9·8 per cent.) of the 500 cases were positive in smears *only*; of these, 19 were positive in the urethra, 17 in the cervix, and 13 in both urethra and cervix.

TABLE I.—*Analysis of Positive Smears.* (49.)

Site.	Number and percentage.
Urethra	19 (38·7)
Cervical canal	17 (34·6)
Urethra and cervical canal ..	13 (26·5)

CULTURES

Urethral and cervical cultures were taken as a routine on a medium of hydrocele agar with a pH of 7·5. This medium is not only translucent but it has the advantage of being transparent, and the gonococcus flourishes on it even when in severe competition with such organisms as staphylococci and *Bacillus coli*.

The cultures were incubated at a temperature of 37·5° C. for half an hour before use, and were returned to the incubator immediately after inoculation. The oxidase reaction was employed as an aid in detecting the gonococcal colonies. In this test the dye used is dimethyl-paraphenylene-diamine-hydrochloride which produces a definite range of colour if gonococcal colonies are present.[1] By its use one or two minute gonococcal colonies which would otherwise have been overlooked may be detected on a slope covered with a profuse growth of other organisms. The diagnosis was confirmed by staining and microscopy as coliform organisms may occasionally cause a pseudo-oxidase reaction.

If the urethra had been tested without the cervical site 34·6 per cent. would have escaped diagnosis. Had the cervical canal alone been examined 38·7 per cent. would have been missed. Table II. shows the analysis of the positive results obtained by cultures from the urethral and cervical sites and the percentage that would have escaped detection had only one site been examined.

TABLE II.—*Analysis of Positive Cultures.* (156.)

Site.	Number and percentage.
Urethra	29 (18·5)
Cervical canal	70 (44·8)
Urethra and cervical canal ..	57 (36·5)

The cultures alone were positive in 156 cases (31·2 per cent.); of these, 29 were positive in the urethra, 70 in the cervical canal, and 57 in both urethra and cervix. Had the urethra been tested without the cervical canal 44·8 per cent. would have been missed; if the cervical canal alone had been examined 18·5 per cent. would have escaped diagnosis.

In the remaining 295 cases, 178 (35·6 per cent.) were positive in both smears and cultures, and 117 (23·4 per cent.) were positive in the complement-fixation test only. This shows that cultures are more than three times as efficient as smears in the detection of gonorrhœa, and that if the facilities for testing are limited, the cultural method has more chance of success than the others.

THE GONOCOCCAL COMPLEMENT-FIXATION TEST

This test demonstrates the presence or absence of the specific gonococcal antibodies in the blood. It is therefore not altogether dependent on the presence of gonococci in the tissues. According to Price [2] the production of these specific antibodies depends on:—

(1) The age of the infection; the test rarely becomes positive before the third or fourth week.

(2) The anatomical spread and extent of the disease, which largely depends on the age of the infection, the reaction of the tissues, and the treatment, if any, which the case had received.

(3) The reaction of the tissues to the gonococcus. A positive fixation result may never be obtained in the type of patient known as a "gonorrhœal carrier." In these cases the smears and cultures may be persistently positive although the gonococcal fixation test remains negative. Frequently a negative result is also obtained in very mild or indefinitely localised infections.

(4) The stage at which treatment is instituted and the efficiency of that treatment. Cases which commence treatment during the first week of the disease may show a persistently negative or only a weakly positive reaction throughout the course of the illness. When the acute stage has subsided the complement-fixation test is often the best means of deciding whether the residual inflammation is due to the gonococcus or to a secondary infection by organisms, such as streptococci or coliform bacilli, as, after several weeks of efficient treatment in the female, the gonococcus is only found with difficulty in smears and cultures.

The reaction becomes negative after clinical cure in about three to four months. If the reaction remains positive in the face of apparent cure it is a definite indication of the presence of an undetected gonococcal focus in the body. The patient should be kept under observation until the focus, such as an early salpingitis, endometritis, bartholinitis, or an infection of Skene's follicles has been discovered. A positive reaction after the disappearance of all clinical signs may be due to, or prolonged by, the use of vaccines during the course of treatment. If a positive reaction is due to the administration of vaccine alone, a decline in strength of the test is quickly observed when this form of treatment is discontinued, and it ultimately becomes negative in about six weeks. Constant supervision is necessary, and it is essential that the clinical history and the clinical state should be closely considered when interpreting the results of the reaction.

With the exception of the rare condition of cross-fixation a positive reaction is definite evidence of a previous or present infection.

CROSS-FIXATION

This condition of cross-fixation is very rare, and personally I have only met five cases.

Oliver showed that occasionally false-positive reactions are given in some catarrhal conditions of the nasopharynx.[3] That these reactions are caused by the presence of the organisms *Micrococcus catarrhalis* and *M. flavus* was also demonstrated by Price.

Persistently positive fixation tests may occur in the two following types of case: (1) those in which there is a double infection, the gonococcal infection being complicated by the *M. catarrhalis* or *flavus*; (2) those in which *M. catarrhalis* or *flavus* is present without any evidence of the presence of the gonococcus. If any doubt exists, monthly parallel quantitative tests should be performed on the patient's serum using a gonococcal antigen against an antigen of *M. catarrhalis* or *flavus* as the case may be. These tests will show a steady fall in strength when using the gonococcal antigen, whereas those of the *M. catarrhalis* or *flavus* will remain comparatively constant.

Table III., drawn up by Price,[2] demonstrates this point:—

TABLE III.—*Highest Dilution Serum giving a Positive Reaction*

Monthly reaction.	Gonococcal antigen.	Catarrhalis antigen.
1st	1 in 60	.. 1 in 80
2nd	1 in 30	.. 1 in 80
3rd	1 in 10	.. 1 in 80
4th	1 in 5*	.. 1 in 80
5th	Partial positive 1 in 5	.. 1 in 80

* Standard dilution of serum used in the test.

In 1931 [4] I reported a case of apparent gonococcal cross-fixation in a small boy; he was brought to the

clinic to exclude any possibility of gonococcal infection, as his father had a previous history of gonorrhœa which had relapsed. The child's fixation test proved to be positive on two occasions, although clinically there was no evidence to support this. Smears from the nose and posterior fauces showed Gram-negative diplococci and cultures taken from these sites showed similar organisms. The organism responsible for this cross-reaction proved to be *M. flavus* 1, but as no antigen of *flavus* 1 was available it was impossible to perform parallel reactions and thus establish an end-point.

As a sequel to the foregoing case a female child of 9 months otherwise healthy, had snuffles and a purulent nasal discharge which had been present since birth. On examination congenital stigmata were absent but a profuse nasal discharge was found. The mother had a history of gonorrhœa which had been treated at Sheffield-street Hospital nine months previously. Her Wassermann reaction was negative. The child's Wassermann, Kahn, and gonococcal fixation tests were all negative. Smears taken from the nose showed streptococci, pneumococci, and Gram-negative diplococci. Cultures taken at the same time grew streptococci, staphylococci, and *M. catarrhalis*. With the *catarrhalis* antigen the complement-fixation test was strongly positive.

ANALYSIS OF THE FIXATION TEST

The results of the complement-fixation test in 500 cases were analysed on the result of the reaction of the blood when it was taken on their first visit. A positive fixation test was given in 293 cases, while 207 were negative. Table IV. shows the percentage of results in the 500 cases.

TABLE IV

Reactions of G.F.T.	Cases and percentage.
Positive	293 (58·6)
Negative	207 (40·1)

Fifty of the 207 cases with a negative fixation test on the first examination showed a positive serological reaction at a subsequent date, so that ultimately 343 cases, or 68·6 per cent., of the 500 cases gave a positive fixation result. The 293 positive cases were divided on analysis into the following three groups as shown in Table V.

TABLE V

Clinical findings.	Smears and cultures.	Cases and percentage.
Typical gonorrhœa ..	Positive	151 (30·2)
	Negative	117 (23·4)
No evidence	„	25 (5)

Cases totalling 151 (30·2 per cent.) were positive; these also had positive smears or cultures; 117 cases (23·4 per cent.) were positive, but the smears or cultures were negative, and these cases showed definite clinical evidence of infection, such as profuse purulent or cervical discharge, erosion of the cervix uteri, or bartholinitis.

Twenty-five cases (5 per cent.) had a positive test with negative smears and cultures, but showed no definite evidence of gonococcal infection clinically. This group undoubtedly contains those cases of latent gonorrhœa which are comparable to latent cases of syphilis in which serological evidence alone shows that the disease exists. Some cases of cross-fixation may also be contained in this group; if so, they were not discovered. The 207 negative cases were divided into three groups according to the time which had lapsed since the date of infection. Table VI. shows how the highest percentage of negative results are in the first group with the shortest period of infection.

Cases totalling 131 (26·2 per cent.) had a negative test, but positive smears or cultures proved the diagnosis. As far as could be reasonably ascertained the time since infection occurred in this group was from one to three weeks. In 34 cases (6·8 per cent.) whose date of infection was three weeks or over there was a negative reaction with positive smears or cultures. In 42 cases (8·4 per cent.) with positive smears or cultures but a negative fixation test, the time of infection was unknown.

TABLE VI

Time since infection.	Smears and cultures.	Cases and percentage.
1 to 3 weeks	Positive	131 (26·2)
3 weeks or over	„	34 (6·8)
Unknown	„	42 (8·4)

The remaining 157 cases continued to have a negative reaction. In these cases, owing to adequate and early treatment or to a sufficiently high immunity of the tissues, the infection remained sufficiently localised to prevent the test becoming positive. This series also includes gonococcal carriers whose reaction remains negative because of the poor and inadequate response of the tissues to the infection.

Fifty-eight of these 500 cases had a previous history of gonorrhœa which in some cases was recent. The fixation test was positive in 56 (96·5 per cent.) and negative in 2 cases (3·4 per cent.); this tends to show that the immunity produced by an attack of gonorrhœa is transient.

COMPLICATIONS AND THE GONOCOCCAL FIXATION TEST

In 67 (13·4 per cent.) of these 500 cases complications were present on their first attendance at the clinic.

Twenty-six presented varying degrees of *bartholinitis*, of which 20 (76·9 per cent.) had a positive fixation test. In 4 of these cases gonococci could not be demonstrated in the pus. The remaining 6 cases (23 per cent.) with negative reactions had a bartholinitis, mostly of the chronic fibrotic variety.

Arthritis was present in 18 cases, of which 15 (83·3 per cent.) gave a positive reaction, while 3 (16·6 per cent.) were negative. These cases had been diagnosed clinically, and although no diplococci were found in the urethra or cervical canal of 7 of them, the positive reaction and the clinical appearances of the genitalia confirmed the diagnosis. *Salpingitis* in all forms varying from a mild catarrhal condition of the tubes to severe bilateral cases was found clinically in 23 cases; 20 gave a positive reaction (86·9 per cent.) and 3 were negative (13 per cent.).

It is admittedly impossible from the fixation test alone to say whether the 12 cases with negative reactions were due to the gonococcus or to some other infection, but all of them had positive smears or cultures.

In this series of 500 cases, although several patients complained of rheumatism, I was not satisfied that this disability was entirely due to the gonococcus in any one of them.

TABLE VII

Complications.	Gonococcal fixation test. Positive.	Negative.
Bartholinitis ..	20 (76·9%)	6 (23%)
Arthritis	15 (83·3%)	3 (16·6%)
Salpingitis	20 (86·9%)	3 (13%)
Total ..	55 (82%)	12 (17·9%)

Table VII. reveals a percentage of 82 positive reactions among cases with complications. This is a low figure, but since this series of cases were examined a new technique has been evolved in the laboratory of the Whitechapel clinic by which the sensitiveness of the test has been increased by 21 per cent. positive reactions.[5]

RELATIVE VALUES OF THESE PATHOLOGICAL METHODS

By taking the total number of positive findings, previously quoted, of each pathological method

separately (as though the other methods did not exist), Table VIII. shows their relative values.

TABLE VIII

	Positive.	Negative.
Cultures	334 (66·8%)	166 (33·2%)
Gonococcal fixation test ..	293 (58·6%)	207 (40·1%)
Smears	227 (45·4%)	273 (54·6%)

The highest number of positive results was obtained by cultures with 66·8 per cent. The gonococcal fixation test came second (58·6 per cent.), but as this test has been increased in sensitivity by 21 per cent. since these figures were obtained, the corrected figure (79·6 per cent.) is more accurate. Smears are a poor third with only 45·4 per cent. positive findings. This means that by using this method alone, which is prevalent practice, the alarming proportion of 54·6 per cent. of cases with gonorrhœa escape detection.

CONCLUSIONS

1. Cultures produced the highest number of positive results (66·8 per cent.).

2. The value of the gonococcal complement-fixation test, as shown by this series, is second (58·6 per cent. positive results), but the corrected figure, 79·6 per cent. when the latest technique is used, places this test first. It has a definite place amongst the diagnostic methods of gonorrhœa, but the clinical history and condition must be closely considered when interpreting the result of the reaction. In many cases it is indispensable, as 142 cases (20·8 per cent.) were discovered which otherwise would not have had their true nature revealed.

3. Smears alone, even when stained with Gram's stain, give very poor results (45·4 per cent.); no less than 54·6 per cent. are overlooked. This figure is even greater if methylene-blue is the only stain employed.

4. Whenever possible the three methods should be combined. The results from one method alone may not be dependable.

5. In gonococcal infections errors in diagnosis may lead to such serious consequences both for the patient and the medical attendant, and the underlying cause of the trouble is frequently so elusive, that every possible method of diagnosis should be used so that the percentage of mistakes is reduced to a minimum.

I wish to express my sincere thanks to Dr. T. Anwyl-Davies for permission to publish these data and for many helpful suggestions.

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DONATIONS AND BEQUESTS.—The late Mr. Henry Trueman Mills, of West Langton, Leicestershire, left among other bequests £100,000 to the Leicester Royal infirmary, "to be held as a permanent endowment of the ward about to be erected at the said infirmary at my expense and to be known as the Mills Ward"; £5000 to the Norfolk and Norwich Hospital; £5000 to the Market Harborough and District Cottage Hospital and Nursing Association; £5000 to the British Home and Hospital for Incurables, Streatham; £5000 to the Royal Hospital and Home for Incurables, Putney; £5000 to the Royal Midland Counties Home for Incurables, Leamington; and £5000 to the Leicester, Leicestershire, and Rutland (Incorporated) Institute for the Blind. The residue of the property will be divided equally between the Leicester Royal Infirmary, the Norfolk and Norwich Hospital, the London Hospital, St. Thomas's Hospital, and the Middlesex Hospital.

Clinical and Laboratory Notes

BRONCHIAL DIVERTICULOSIS

BY H. V. MORLOCK, *M.C.*, M.D., M.R.C.P. LOND.
AND
A. J. SCOTT PINCHIN, M.D., F.R.C.P. LOND.
PHYSICIANS TO CITY OF LONDON HOSPITAL FOR DISEASES OF HEART AND LUNGS

STRUCTURAL abnormalities of the tracheobronchial tree have been regarded as rare, but modern methods of investigation with lipiodol and bronchoscopy reveal abnormalities more often than was suspected. Of those we have seen, apart from several cases of congenital bronchiectasis and one case of transposition in dextrocardia, the majority have been of minor importance. The following case is interesting for various reasons.

A man of 50 years complained of a cough with a large quantity of purulent expectoration. The physical signs were those of bronchitis and emphysema. The skiagram showed only increase of striation. Two years previous to admission patient had been in another hospital where, after a lipiodol injection had been done, he was told that he had bronchiectasis. Following our routine in the investigation of all cases of bronchiectasis we bronchoscoped this patient. We found at this examination a condition which we had not met with before nor seen described, though Jackson casually mentions that diverticula may occasionally be found in the trachea.

Bronchoscopic findings.—The trachea was considerably larger in diameter than normal; between each ring of the trachea the mucous membrane was deeply depressed and in many of the intercartilaginous depressions small openings could be seen. The condition was present throughout the length of the trachea and the right and left main bronchus as far as could be seen with the bronchoscope when it was fully inserted; further there appeared to be an abnormal number of very small bronchial openings branching directly off the main bronchi. Through the bronchoscope the bronchial tree was injected with 40 c.cm. of lipiodol and a skiagram was taken.

Skiagraphic findings.—The result fails to show a bronchiectasis of the ordinary type but shows a dilatation of the trachea and the whole bronchial tree, and the diverticula were filled with lipiodol. The accompanying Figure shows the salient points more effectively than a reduced print. The trachea is markedly widened and at the level of the top of the manubrium is about a third as wide again as the normal trachea; at this level a large cyst is seen about the size of a shilling half filled with lipiodol. The intercartilaginous rings are marked with very deep depressions in which pools of lipiodol lie; these depressions are irregular in shape and in some there are patches of lipiodol which appear to be outside the diverticula. The irregularity and increase in size is continued all down the bronchial tree and the bronchi have an appearance suggestive that multiple little branches are present, as seen in congenital bronchiectasis. The irregularity of the smaller bronchi is shown by beading

which is rather different in appearance to that ordinarily seen; the outlined diverticula and various roundish patches of lipiodol are seen which appear to be outside the bronchial tree.

We report this case because it may be of help to radiologists and clinicians in recognising the condition when it is seen in lesser degree. For the condition we suggest the name of bronchial diverticulosis. The further study of this type of case may throw light on the development of bronchiectasis, especially the congenital form, to which it appears to have a superficial resemblance.

THE USE OF CHLOROFORM CAPSULES DURING LABOUR

By Arthur Rees, L.R.C.P. Edin., M.M.S.A. Lond.

Within the past few months an investigation as to the value of chloroform capsules during labour has been carried out, under my supervision, at Queen Mary's Maternity Home, Hampstead. Seven qualified midwives have taken part in this investigation, and although a certain number of cases, especially among the earlier ones, have been carried out under my direct supervision, the vast majority have been under the sole responsibility of the midwife conducting the case. Some of us have had previous experience in the use of these capsules, but this investigation has been approached with an open mind, quite unbiased by any preconceived opinion. The conclusions arrived at are based entirely on this series of cases.

THE INVESTIGATION AND ITS RESULTS

The series comprises 100 cases, which were not in any way selected. Each case as it came to the Home was taken, only those which required a general anæsthetic being excluded.

The ages of the patients varied from 19 to 41 years, and consisted of 39 parous for the first time, and 61 whose parity varied from the second to the sixth time. In all cases the presentation was either primarily a vertex, or one turned to a vertex during prenatal care. That the cases were not selected is evidenced by the fact that the series contains several showing obstetrical abnormalities. Among these was one generally contracted pelvis in which spontaneous delivery was effected. Six showed a moderately raised blood pressure with or without albuminuria. One antepartum hæmorrhage due to marginal placenta prævia is also included, while another is a case of twins.

The average number of capsules used was 3·41, which figure includes those used to facilitate the insertion of superficial sutures. The average interval between each capsule works out at 10·16 minutes.

Following the questions asked on the form supplied by the National Birthday Trust Fund the observations on the apparent effect of the capsules may be tabulated as follows:—

Apparent effect on uterine contractions.	None	84
	Decrease	16
	Increase	0
Apparent effect on pain felt.	None	5
	Some	75
	Great	20
Apparent effect on voluntary effort.	None	60
	More forcible	3
	Less forcible	37
Patient's opinion.	No use	8
	Some use	42
	Great use	50

A better estimate of the value of these figures may perhaps be obtained from a less detailed analysis. Thus, in 84 per cent. of cases there was no apparent effect on the uterine contractions, whereas only 16 per cent. showed a decrease. In 95 per cent. of cases there was apparent lessening of pain felt, while 5 per cent. showed no difference. Voluntary effort was apparently unaffected in 60 per cent. and diminished in 37 per cent., while in 3 per cent. of cases there was a definite increase. The patients themselves expressed opinions in favour of the capsules in 92 per cent. of cases, only 8 per cent. considering them of no use. In connexion with this latter, it is interesting to note the various opinions expressed by primiparous patient, and multiparous patients. These were as follows:—

Primipara. 39 cases.		Multipara. 61 cases.	
No use.. 4 (10·25%)		No use.. 4 (6·55%)	
Some use 18 (46·15%)	89·7%	Some use 24 (39·34%)	93·4%
Great use 17 (43·58%)		Great use 33 (54·09%)	

It is seen from these figures that those in childbirth for the first time appreciated the use of the capsules to almost the same extent as those who had experienced childbirth on at least one previous occasion—i.e., 89·7 per cent. as against 93·4 per cent. I must confess to some surprise at this result, as I should have expected the balance of appreciation to be much more on the side of the multipara, and in fact my own observations led me to think such to be the case.

Coming now to the "ill-effects." In no case was there any ill-effect to the child. Nine of the mothers are described as being very excited under the influence of chloroform, one being said to have become uncontrollable. In six cases delay was noted in the second stage, while there was loss above normal in eight cases during the third stage. It is probable that the use of chloroform contributed to the last two ill-effects, though it is difficult to assess to what extent. The hæmorrhage in each case responded to uterine stimulants, and could not be classed as serious. In no case did the delay adversely affect the child.

CONCLUSIONS

The results obtained in this investigation, together with personal observation of cases in the series, leads to certain definite conclusions.

In the first place, it seems to be established that the use of chloroform capsules by midwives in the second stage of labour is both safe, and in the majority of cases beneficial to the patient. Provided, of course, that due care is exercised.

Considering the method of administration several questions arise. Firstly, when should the first capsule be used? Should it be at the onset of the second stage or some time later? Experience in this series showed that the best results were obtained when the first capsule was given when definite progress in the second stage of labour became evident. Indeed, it would seem unnecessary to start chloroform early if sedatives have been given during the first stage. I would here put forward a very strong plea for the more universal, and free, use of sedatives during the first stage. Personally I am convinced that relief of mental anxiety and pain during a stage at which the mother can do nothing useful to help herself is of the utmost importance to success in the later stages.

A further question of vital practical import also arises. Can these capsules be safely used by a midwife conducting a case alone? If not, what assistance is essential? To the first of these questions the answer is, I think, in the negative. The midwife's attention is, and ought to be, concentrated on the proper conduct of the second stage, and cannot, therefore, be divided by any other issue. The answer to the second question is, in my opinion,

"another trained person," and herein lies a practical difficulty in rural districts. Chloroform is certainly a potent drug and I for one would not consent to allowing any but one trained in its use to administer it, even in the form of capsules such as those used in this investigation. I am convinced that these capsules can be a very real danger to mother and child if improperly used.

In institutions, such as Queen Mary's Maternity Home, and in district work in large towns, no great difficulty should arise to prevent their use. But taking the country as a whole some different organisation to that already in existence seems to me essential if the use of chloroform capsules is to be universally adopted.

In conclusion, I wish to express to the matron and staff of Queen Mary's Maternity Home my sincere thanks for their coöperation in this investigation. Also, I wish to thank the National Birthday Trust Fund for kindly supplying the capsules.

MEDICAL SOCIETIES

PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

A MEETING of this society was held on July 7th and 8th in the new Algernon Firth Institute of the University of Leeds. The chair was taken at various times by Prof. M. J. STEWART, Prof. J. W. MCLEOD, and Prof. R. D. PASSEY.

R. J. V. PULVERTAFT (London) described the differentiation of bacteria by their fluorescence in ultra-violet light: the substance responsible for the effect is heat-stable and soluble in alcohol.—J. W. HOWIE (Glasgow) gave an account of the modifications induced in Aronson's streptococcus by growth in dilute acriflavine; at one stage rough strains without capsules were still virulent.—R. CRUICKSHANK and A. SHARMAN (Glasgow) had worked out the occurrence of glycogen in the vaginal epithelium, and showed how it was related to the development of an acid reaction and the characteristic bacterial flora.—J. W. MCLEOD and his colleagues (Leeds) had further investigated the occurrence of the "gravis" and "mitis" types of diphtheria bacilli in Glasgow, Hull, Leeds, and elsewhere. Mitis infections were everywhere mild, but many intermediate strains had been found and appeared to be associated with forms of the disease about as severe as those with gravis bacilli.—W. M. CUMMING (Grassington) found 25 bovine infections in 1177 cases of pulmonary tuberculosis in England; seven out of 31 cases which had been in close contact with cattle were bovine, and bovine infections seemed to be more frequent in the north than south.—J. MCINTOSH (London) had cultivated an appearance suggestive of a filtrable microbe from cases of influenza and carried it through numerous subcultures; it lived for a long time at room temperature or in the cold and could survive boiling.—C. H. BROWNING and R. GULBRANSEN (Glasgow) described a remarkable styryl compound which, injected into mice, protected them against trypanosome infections for many months.—A. A. MILES (Cambridge) showed that the firm combination of antigen and antibody in the precipitin reaction was not complete when actual particulation had begun.—S. J. HOPKINS and A. WORMALL (Leeds) had worked at the immunology of phenylureido compounds with proteids; they showed a specificity of their own; thus an antiserum to the serum globulin compound would react with the caseinogen and gelatin compounds.—M. H. FINKELSTEIN (Edinburgh) confirmed his previous work on the value of absorption tests in showing the specific and non-specific components of the bactericidins of normal serum.—R. WILLIAMSON (Cambridge) showed that the constriction of the bronchioles in anaphylactic shock could be shown (but not very well) by lipiodol and X rays; also that the relative physiological dead space was increased in advanced phthisis, bronchiectasis, and pleurisy.—A. N. DRURY (Cambridge) distinguished between anaphylactic and sero-toxic shock by electrocardiograms.—H. W. FLOREY and H. E. HARDING (Sheffield) described the very alkaline mucoid fluid secreted by Brunner's glands, and how it protected the duodenal mucosa from the destructive effect of the acid gastric juice.—J. MCINTOSH (London) said that all the fowl tumours he had produced by tar could be classed as fibrosarcomas, though some were endothelial and some angeiomatous; one was easily transmissible by filtrates.—P. R. PEACOCK (Glasgow) had had no success in filtration experiments with similar tumours.—I. BERENBLUM and L. P. KENDAL (Leeds) had produced tumours in rats and fowls with suspensions of dibenzanthracene without any fat.—L. W. PRICE (Glasgow) thought that all natural and experimental bird tumours could be classified into three groups—round-celled, spindle-celled, and spider-celled.—SYLVIA DICKINSON and R. E. HAVARD (Leeds) found no evidence that the reaction of the arterial blood of persons with cancer differed from the normal.—A. E. BOYCOTT and C. L. OAKLEY (London) showed that the blood volume was increased after any but quite small transfusions, and that the plasma volume remained remarkably constant with a considerable loss of injected plasma protein.—C. J. POLSON (Leeds), from experiments on rabbits poisoned with shale oil, concluded that glycine tolerance was the best available test of liver function.—J. DAVIDSON (Edinburgh) demonstrated the drastic changes in the liver caused by a diet deficient in cystine.—J. B. DUGUID (Cardiff) showed that an excess of acid phosphate in the food, especially combined with an excess of vitamin D, produced an interesting form of chronic nephritis in rats.—D. BAIRD and J. S. DUNN (Glasgow) described as the characteristic renal lesion of eclampsia a thickening of the basement membrane of the glomerular capillaries, easily overlooked on superficial examination.—FREDA K. HERBERT (Leeds) showed that the calcium in cerebro-spinal fluid remains relatively constant with very wide variations in the total and diffusible calcium of blood plasma; it rises in inflammatory conditions.—M. J. STEWART and S. J. HARTFALL (Leeds) described a large mass of bone-marrow found by the thoracic vertebræ in a case of acholuric jaundice.—R. CARMICHAEL and C. OLDFIELD (Leeds) discussed a strange example of a pseudohermaphrodite, externally a female, with a testis and good epididymis in the broad ligament, operated on for a malignant teratoma of testicular type in the pelvis.—ELLA M. HICKMAN (Leeds) demonstrated a chorion epithelioma (presumably teratomatous in origin), with widespread metastases, in a girl of 12 years.—R. W. SCARFF (London) discussed the non-keratinising radio-sensitive tumours of the nasopharynx, &c., known as lympho-epithelioma.—J. W. S. BLACKLOCK (Glasgow) described minute fibrotic kidneys in an infant, and other kidneys with many lymph follicles in their substance.—There were, in addition, a number of demonstrations.

INTERNATIONAL PÆDIATRIC CONGRESS

THIS Congress was opened on July 20th in the Great Hall of the British Medical Association by the Duke and Duchess of York, the chair being taken by Dr. GEORGE STILL.

The DUKE OF YORK, in opening the proceedings, emphasised the importance of the occasion. This was the first international pædiatric congress to be held in this country. The future of the nation depended on its children. Medical research to-day everywhere tended towards prevention, and the chief discussion would be on the diseases which might be conveyed to children by milk. The scientific study of children was of recent growth; there were people still living who could remember the foundation of the first hospital for children in this country. Speaking as a father, His Royal Highness voiced the gratitude of parents for the benefit which would result from the Congress.

The PRESIDENT, when thanking the Duke and Duchess, explained the significance of allergy in the diseases of children. Prevention, he said, was the keynote of medicine to-day.

Sir THOMAS BARLOW supported the vote of thanks and prophesied far-reaching benefit to the moral and physical welfare of the child as the result of the Congress.

A general discussion on

The Nature of Allergy

was opened by Prof. A. R. RICH (Baltimore). He said that while the body was acquiring an active immunity to bacteria during infection, the tissues ordinarily became hypersensitive to the protein of the infecting organism. Experiments made by himself and Mrs. Lewis had shown that the individual tissue cells of the allergic body were markedly hypersensitive even when washed free of plasma. This hypersensitive state played an important rôle in all bacterial infections, and it was becoming more and more evident that lesions and symptoms formerly supposed to be the direct result of bacterial poisons were really the result of the hypersensitive state. For many years hypersensitivity had been believed to be essential for the successful operation of immunity, but experiments had shown that immunity could be separated from allergy. Neither the spread of bacteria nor their efficient destruction depended on allergic inflammation. Dr. Rich described the experiments which proved this, and also those which showed the effect of allergy in the absence of immunity—an increased susceptibility. Obviously, therefore, allergic reactions could not be used as an index of immunity.

Prof. F. HAMBURGER (Vienna) defined allergy as a change in the capacity of the organism to react, caused by antigens, and dealt with its clinical aspect. The only useful clinical tests for allergy were found in tuberculosis, but the tuberculin reaction was not completely reliable unless the 1 mg. cuti-reaction were applied. Allergy developed before the onset of the disease and was continuous, but was subject to fluctuations, caused by other diseases, light, food, and unknown factors. The fluctuations might produce exacerbations of disease. Syphilis followed much the same rules as tuberculosis and vaccinia. Diphtheria included an anaphylactic reaction, but the pseudo-reaction was allergic. Apart from tuberculosis, however, the only allergic test of clinical interest in infectious disease was the blanching phenomenon in scarlet fever.

Dr. M. PÉHU (Lyons) read a paper by himself and Dr. P. WORINGER, of Strasbourg, on

NON-INFECTIOUS ALLERGIES IN CHILDHOOD

Non-infectious allergies, he said, represented a state of supersensitisation in the presence of substances which in normal subjects had no effect or caused a pharmacodynamic effect. These allergies might be hereditary or acquired through a preparatory contact. The paper described in detail the clinical manifestations of these allergies. Allergic reactions might be found at any age from the eczema of infancy to the migraine of adolescence. The tropho-allergens predominated in the first 12 months of life; the pneum-allergens from the second to third years on; and the others only appeared in adult life. The distinction between idiosyncrasy and anaphylaxis was arbitrary; sensitisation might occur in the germ-cells or in utero as well as after birth. No present treatment was entirely satisfactory; shock treatment was valuable, but desensitisation was the most important method. The physician must make a judicious choice among the various methods available.

Dr. R. F. COLLIS (Dublin) expressed the opinion that there was no evidence to show that allergy was a beneficial or defence process. One germ was now known to cause several syndromes, and the same syndrome might be caused by more than one germ. He illustrated this thesis by cases of erythema nodosum, some associated definitely with tuberculosis, and others with the hæmolytic streptococcus, the meningococcus, and the dysenteric organism; the condition was hyper-reactive tissue response to various allergens. Prof. C. C. Okell had suggested that bacterial allergy was an imperfect process in the development of immunity, which was taking place too fast in civilised communities.

Dr. ERNBERG (Stockholm) said that in most cases erythema nodosum was an allergic syndrome due to tuberculosis. It appeared at a very early stage. Careful tuberculin tests and radioscopic examinations had been made in a number of cases, and had supported this theory. No tubercle bacilli had been found in the skin infiltrates, which were not equivalent to tuberculous foci but were allergic reactions. There might also be cases not due to tuberculosis, but in many cases the appearance of erythema nodosum might lead to the discovery of an unsuspected focus of tuberculosis.

Prof. GROER (Lwow) said that allergy was not a specific phenomenon; the two factors in it of the greatest importance were susceptibility, the faculty of being damaged, and reactivity, the faculty of responding to the damage. A method of measuring these factors had now been found. He described a clinical investigation showing the value of this work.

Prof. G. DE TONI (Bologna) described recent Italian work on allergy. Pacchioni's study of tuberculosis had, he said, shown that hypersensitiveness preceded immunity, and was quite separate from it. His own work on histamine shock in infants had shown serious disturbances of the hydric equilibrium of the blood and an increase in blood-sugar and uric acid. In the child the humoral factor in allergic sensitisation was important, but the predominant part was played by diathesis, probably acting by means of a lowered threshold or want of equilibrium in the neuro-vegetative system.

Prof. R. DEBRÉ (Paris) emphasised the need for definition, and said that an organism was in a state of allergy if it reacted to an antigen differently the second time from the first. The association between

allergy and anaphylaxis was intimate, but the two could be distinguished; the latter was characterised by violent shock and general symptoms, while the former was essentially local, slower to develop, and amenable to treatment. There were two kinds of immunity: immunity of reinfection and immunity of superinfection. The former was associated with antibodies in the blood and was passively transmissible; the latter was the symbiosis achieved by the subject of a chronic infection and was not accompanied by antibodies in the circulation. The manifestations of allergy in childhood fell into three groups: anaphylactic shock, the cutaneo-mucous allergic syndrome, and eczema of infants. There was a fundamental difference between the eczema and the others; eczema was constitutional, not acquired, and no desensitisation was possible. To it he applied the term "emphytopathy."

Dr. RATNER (New York) expressed surprise that protein hypersensitiveness had been left out of the discussion, and described animal experiments and clinical observations carried out in Bellevue Hospital. The conclusions from this work were, he said, that allergy was never inherited but always acquired; that the fœtuses of animals could be sensitised in utero through the placental circulation; that allergens might gain entrance to the blood stream by invasion or injection and there quickly cause the formation of antibodies which became fixed to the smooth muscle walls. The body was unable to destroy the excess antibodies formed, and their fixation in the cells produced the condition of hypersensitivity. Immunity might be temporary or permanent, according to the respective quantities of allergen and antibody, and to certain physiological and chemical factors such as pH and endocrine imbalance. The whole future of hypersensitiveness rested with the obstetrician and pædiatrician, who could reduce the amount of protein ingested and inhaled by mother and child. Hypersensitiveness had been indispensable in man's development of immunity.

The second general discussion was on

The Prophylaxis of Milk-borne Disease

Dr. A. PETTERSSON (Stockholm) introduced the subject with a review of the dangers, especially that of tuberculosis, and summed up the protective measures as breast-feeding, satisfactory herd-control, heating of milk, and clean handling.

Prof. BESSAU (Berlin) discussed saprophytes in milk, the colon bacillus being, he said, the most important. The decomposition of the milk itself was not dangerous. Colon bacilli grew actively in the large intestine of the artificially fed infant, but their growth was inhibited by breast-milk except in premature babies. Colostrum contained coli antibodies which might be very important in the new-born child. Diarrhœa neonatorum was very common in young animals; experiments on new-born calves had shown that the condition was due to a special pathological strain of *B. coli* only found in domesticated animals. Colostrum protected the calf, but the disease nearly always appeared immediately after birth if mature, raw, or boiled milk were given. The clinical symptoms of calf diarrhœa closely resembled those of human infantile diarrhœa. Endogenous colon bacilli spread to the upper part of the intestinal tract whenever there was an abnormal demand on the digestive powers, especially trauma. Endogenous and exogenous types might be combined. In Prof. Bessau's opinion the symptoms attributed to bad milk were all due to ingestion of living colon bacilli. The milk might taste and smell quite good. All therapeutic efforts came down to arrest of *B. coli*.

These bacilli were only facultatively pathogenic, and the conditions necessary for them to become so were: (1) the strain; (2) the number; and (3) the state of the intestinal canal. Pasteurisation in central depôts was certainly not the proper prophylactic measure; the milk might become contaminated afterwards. The only unobjectionable method of sterilisation was the Soxhlet. Dried milks could be used, or fresh milk boiled just before drinking. Prof. Bessau said that dried milk prepared by the roller process was freer of bacilli than that produced by the spray process. Buttermilk was also valuable.

Prof. G. B. ALLARIA (Turin) classified the diseases due to milk as those due to natural characteristics—e.g., excessive protein and deficiency in iron or vitamins; those due to careless grooming or animal disease; those due to contamination; those due to preparation of the milk; and those due to adulteration and sophistication. The two enemies of clean milk were, he declared, man and microbes. He outlined the Italian regulations for keeping the milk-supply pure, and insisted on sanitary conditions in the byres and milkers. There was, he said, no need for a special milk for infants if the general supply was adequately supervised, and there ought to be only one grade, no half measures being tolerated. In Europe the consumption of milk "suitable for consumption in the raw state" varied from 1 to 5 per cent. of the total consumption. The technical and economic difficulties inherent in its production, and the doubt of many pædiatrists whether raw milk was really better for infants, led to the necessity for producing a safe milk by heat treatment. The changes caused by sterilisation might easily be harmful to the infant, but pasteurisation avoided this risk and, if properly carried out, did not seriously damage the vitamins. Milk must be pasteurised immediately after milking, cooled at once and bottled, consumed on the same day, and examined each day bacteriologically. Stassano's method gave excellent results and constituted a real advance.

Prof. P. LEREBOULLET discussed the value of hygienic regulations, and municipal and collective methods, and described the measures taken in various countries. Raw milk was not an ideal food, and the only safe measure was pasteurisation of hygienically produced milk under stringent control. Failing this, milk must be boiled. It was therefore important to undertake vigorous measures in all countries for the production and sale of safe milk for children.

Dr. J. M. HAMILL described the position of bovine tuberculosis in this country and the measures taken to combat it, by eradication of disease from the herds and by pasteurisation. There was little likelihood of achieving the former aim within a reasonable time; tubercle might be found even in Grade A (T.T.) milk. Pasteurisation should, however, be accompanied by every possible effort to get clean milk; it must also be controlled to be effective. He rejected the idea that tuberculous milk in moderation was a good thing; the bovine bacillus was a grave menace to man, and not a suitable immunising agent.

Prof. FEER described work in Zürich with rachitic and other children, and advised boiling the milk.

Prof. MONRAD (Copenhagen) gave an account of a study of the effects of raw and pasteurised milk; the latter had cured scurvy, but very slowly. Pasteurised milk, in his opinion, was not clean enough to give to infants. Decomposition before the heating could not be detected by sight, taste, or smell afterwards;

bacteriological examinations of pasteurised milk had shown the presence of streptococci, colon bacilli, and even tubercle bacilli. In Denmark mothers were advised to buy raw, controlled milk in bottles, and to boil it at home for not more than two minutes. The results were very good.

Prof. P. RAHMER (Strasbourg) spoke of the prescorbutic disorders due to lack of vitamin C in milk. In his clinic attempts had been made to find a diagnostic criterion of these dystrophies, and it seemed likely that further study of urinary reactions would establish a test.

Prof. G. FRONTALI (Padua) urged the modification of cow's milk, in addition to ensuring its cleanliness. In Italy a simple method had been used, for the last ten years, to reduce the casein and increase the lactoalbumin content. The results had been very clearly reflected in the weight curves. Olive oil was valuable to supply the fat requirement. It tended to produce constipation and greasiness of the skin, but the latter was prevented by giving vitamin B, and the resistance to slight infections was increased by this method.

Dr. H. BOCK (Berlin) spoke of the danger of contamination of milk after the bottle had been opened, and advised sterilising only enough at a time for one or two feeds.

Dr. W. C. DAVISON (U.S.A.) suggested that Brucella infections in children often went unrecognised, and that the implantation of *B. coli* in the upper part of the tract might be due to delay and congestion of food. Clean milk was so costly that the poor could not use it, and outbreaks of milk-borne disease still occurred in spite of its use. Moreover, milk was liable to contamination in the home. The solution of the problem was the use of dried milk with the addition of lactic acid, an antiseptic, and some carbohydrate—such as molasses, which contained iron. This mixture was cheap, digestible, and most satisfactory. Evaporation sterilised the original milk, and the lactic acid gave safety of home handling. The objections were two: vitamins were destroyed, and the taste was unattractive. Both these could be overcome.

Dr. WRIGHT (Montreal) thought that even pasteurised milk should be boiled, and advocated evaporated milk.

Prof. J. DUZÁR (Hungary) said that the chief drawbacks of artificial milks were that their albumins were not properly adapted to the needs of the child, and described a preparation of bovine colostrum.

Prof. MOURIQUAND (Lyons) emphasised the problem of minor vitamin deficiencies; many apparently healthy children suffered from disequilibrium of one or other vitamin, revealed by histological lesions long before any clinical appearances. The child might inherit its mother's unsuspected disequilibrium, especially of vitamin B.

Prof. NOEGGERATH (Freiburg) stressed the importance of finding out exactly what effect all the proposed measures of changing or treating the milk had on the child's nutrition.

Prof. L. SPOLVERINI (Rome) said that all artificially fed babies were tropho-labile, probably on account of the excessive protein and salts in cow's milk, favouring intestinal putrefaction with all its results and insolubility of fæces. Research had shown that the addition of 6 per cent. gum arabic obviated many of these difficulties, producing steady increase in weight and stabilisation of the digestive functions, with increased nitrogen retention. A dried milk containing gum arabic had been produced, and had given excellent results over five years.

Prof. JUNDELL (Stockholm) pointed out that any deficiency in the milk applied even more to cream and butter. Centrifugalisation might concentrate tubercle bacilli in the cream.

Dr. PETRANYI (Hungary) described the preparation of vitamin C in crystalline form from paprika.

Other Communications

Research in the *common infectious diseases* of children has not yielded any great discoveries since the last congress, but the practical importance of the subject attracted a good attendance to the section dealing with it. The value of the treatment of infectious diseases with human serum was discussed. Prof. I. Jundell (Stockholm) in a paper on human adult serum as a means of protection against whooping-cough, said that in his experience it would prevent or modify the disease if given early enough. Drs. H. Baar and H. Benedict (Vienna) described the value of human serum in the treatment of malignant diphtheria. Prof. A. Eckstein (Düsseldorf) speaking on encephalitis in children, expressed the view that each variety of encephalitis is caused by its own specific virus, and is not the result of a reactivation of a single dormant encephalitis virus by the complicating infectious disease. He described the transmission of encephalitis to a monkey with a virus obtained from a child with herpes zoster. From this case a contact child developed chickenpox 18 days later, and from the vesicles of this child Prof. Eckstein was able to transmit an encephalitis to another monkey.

Dr. Robert Gittins (Birmingham) spoke of *anæmia and reticulosis*. He described the types of reaction of the reticulo-endothelial system found in four cases of obscure anæmia. He regarded the reticuloendotheliosis as a reaction to blood destruction and abnormal erythropoiesis. The syndrome, known as von Jacksch's anæmia, is a regenerative phase of chronic erythronoclastic (hæmolytic) anæmia, and shows these features. It may pass into an aplastic phase in which reticulo-endothelial proliferation remains as the outstanding feature. Many obscure anæmias probably fall into this group.

Tuberculosis in childhood was discussed in papers by Prof. P. F. Armand-Delille (Paris), Dr. H. Bock (Berlin), and Dr. P. Thomazi (Paris). Prof. Armand-Delille took the opportunity of presenting a survey of the anatomical and clinical studies he and his colleagues have been systematically making into the different forms of pulmonary tuberculosis in infancy and childhood.

The congress absolved itself from the plaint that physicians devote too little time to the treatment of disease by discussion of communications by Prof. S. Monrad (Copenhagen) on the treatment of epilepsy in infancy and childhood, in which he advocated the use of sodium borate; by Drs. Pehu (Lyon) and Worringer (Strasbourg) on the treatment of infantile eczema; by Prof. E. Nobel (Vienna) on ten years of thyroid therapy; by Dr. O. Saxl (Prague and Dr. S. Karelitz (New York) on the treatment of alimentary toxicosis; by Dr. B-S. Jenö (Hungary) on the treatment of acute anterior-poliomyelitis. Probably the most important therapeutic advance reported was that mentioned in a paper by Drs. Grayzel, Jacobi, Warsall, Bogin, and Kramer (New York) on clinical and experimental studies in amyloidosis. Their results showed amyloid disease is influenced by giving dry powdered liver; in their experience sufficient liver stays the progress of waxy disease, and in some cases effects a cure.

The next congress will be held in Rome in 1936, with Prof. L. Spolverini as president.

INTERNATIONAL SOCIETY OF ORTHOPÆDIC SURGERY

THE second congress of this society was held at the house of the Royal Society of Medicine from July 19th–22nd, under the presidency of Prof. G. NOVÉ-JOSSERAND, of Lyons. After he had given his opening address on July 20th a discussion was held on the

Mechanism of Articular Movements

H. VON BAYER illustrated in a graphic manner by means of ingeniously contrived models the fact that the action of a muscle varies according to the position of the joint, and according to whether it acts against resistance or not. Thus when the leg is hanging down and not bearing weight, contraction of the adductor muscles of the thigh adducts the leg. When weight is borne upon the ball of the foot, however, and the whole leg is straight, the adductor muscles then externally rotate the leg, but when weight is borne on the ball of the foot and the hip and knee are flexed then these muscles internally rotate the leg.—E. DELITLA (Venice) and R. SCHERB (Zurich) followed the latter, contributing an interesting survey of synergism in muscular movement.

On the second day there was a general discussion upon the

Treatment of the Tuberculous Hip

in which such great authorities as J. ERLACHER (Austria), A. MAFFEI (Belgium), M. S. HENDERSON (America), E. SORREL (France), the PRESIDENT, and numerous others took part. There was an unanimity of opinion upon the unfavourable results obtained in adults by conservative treatment. It was generally felt that some form of arthrodesis operation was necessary. Such differences of opinion as arose were with regard to details. Should the operation be done early at the onset of the disease? Does the presence of an abscess influence the procedure, and is it best to do an intra-articular or an extra-articular operation, or a combination of the two? The whole meeting joined in condemning the intra-articular operation by itself. No ankylosis was obtained by this method alone.—F. H. ALBEE (New York) favoured an extra-articular graft far removed from the site of the lesion at the onset of the disease. He held that the new bone thus formed would secure for the joint greater immobilisation and would shorten the extent and the duration of the disease. He was not in favour of opening the joint cavity for fear of contaminating the graft, and thought that the presence of an abscess was a counter-indication to the operation. Sorrel agreed with Albee in all these respects, but raised the question as to whether favourable results from this operation were due to the mechanical effects of the graft or whether they were due to some mysterious effect the graft had upon the local calcium metabolism; for it was a fact that diseased hip-joints thus treated did show a remarkable tendency to recalcification. Henderson and Maffei favoured the combined operation, since by opening the joint it might be possible to deal radically with the focus of the disease. Henderson had performed two such operations in the presence of an abscess with favourable results, but on the whole preferred to wait till the abscess had dried up before interfering. Maffei, on the other hand, holds that the presence of an abscess is not a counter-indication, for an abscess alone is not necessarily an indication of the virulence of the infection, and is indeed often sterile. With regard to the treatment of tuberculous disease in children the cases discussed came under two headings: those in which it is in the juxta-epiphyseal axis, and those in which it is primarily in the joint itself. In the former case Sorrel, Erlacher, and Maffei recommended that an attempt should be made to excise the tuberculous cavity before the joint becomes involved. But in cases of primary joint lesion the opinions were fairly unanimous that a conservative line of treatment is the best. The only dissenting voice was that of Maffei, who did not agree that results were so good, and thought that a large number of adult tuberculoses were really the extension into adult life of a disease started in childhood. He considers that there are certain types of cases in which bone graft operation is justifiable in children, though he admits that a bone graft in a child tends to become absorbed, yet he too laid stress upon the remarkable power of bone graft for stimulating recalcification.

Short Papers

The third day was devoted to the reading of short papers. Unfortunately these were so numerous that the authors hardly had sufficient time to express their views. On the other hand, by compressing them into short space, opportunity was afforded to the younger orthopædic surgeons of all nationalities to exchange ideas, and their response to this opportunity was one of the most satisfactory features of the congress. Among others, VALLS (Buenos Ayres) read a most interesting paper in which he suggested that examination of the lymphatic glands might often help in the diagnosis of a joint lesion under suspicion of being tuberculous. He quoted several cases where all the usual examinations of a knee-joint were negative, but examination of a lymphatic removed from Scarpa's triangle showed definite tuberculous infection, and the subsequent course of the joint condition confirmed the diagnosis. Similarly he has had cases under observation where lymphatic glands proved not to be tuberculous and the suspicious joint lesion cleared up. In doubtful lesions of ankle and knee he removes glands from Scarpa's triangle, and in those of the elbow, wrist, and shoulder he removes an epitrochlear or axillary gland. BENTZON (Copenhagen) gave a noteworthy contribution on the surgery of Erb's obstetrical paralysis. He pointed out that it was curious that although the fifth and sixth cervical nerves supplied more than seven muscles, yet in the typical Erb's paralysis seven muscles are characteristically picked out; and he explained this phenomenon by the fact that these muscles are supplied by four nerves, all of which either pass through channels in bone or round bone or in very close proximity to bones—e.g., the humerus, so that when the arm is pulled on these nerves are taut. The other branches of the fifth and sixth muscles, such as supply the longus coli, scalenus, or subclavius, do not lie in close relationship to bones and are therefore not subjected to the same strain.

The Congress Dinner

On the evening of Friday, July 21st, Prof. Nové-Josserand presided over a well-attended and successful banquet at the Dorchester Hotel, London. The majority of the delegates were accompanied by ladies, so that the banquet became a gay social affair. Further there were only two speeches, excluding the loyal toasts, and both of them were well delivered. Mr. V. Warren Low, in proposing prosperity to the society, dwelt on the rapid strides which orthopædic surgery had made during his professional life, so that to him it seemed that its range now included

the whole of surgery except that concerned with the cranial, thoracic, and perhaps abdominal cavities. The toast was responded to by Prof. Nové-Josserand, who dwelt on the value of international meetings in the promotion of science, and took the opportunity of paying an eloquent tribute to the services and memory of Robert Jones, the founder of the society and its first president.

REVIEWS AND NOTICES OF BOOKS

The Duodenum

By EDWARD L. KELLOG, M.D., F.R.C.S., Professor of Surgery, New York Polyclinic Medical School; Attending Surgeon, New York Polyclinic and Gouverneur Hospitals. New York: Paul B. Hoeber. 1933. Pp. 855. $10.

THIS comprehensive monograph, the size of a student's text-book of the whole of surgery, is a study of the normal and pathological duodenum from every aspect. Its compilation must have entailed an immense amount of work, for the labour of examining the literature of the subject is a task of great magnitude; at the end of the book there are 121 pages of references. The text has moreover been prepared with discrimination. A full account of the anatomy of the duodenum is followed by an excellent review of the physiology in which the author has had the collaboration of Prof. A. C. Ivy, an authority on alimentary physiology. The chapters on bacteriology and methods of examination are important, and the account of the use of X rays in the diagnosis of duodenal abnormalities by Dr. A. Judson Quimby is one of the best we have seen. An interesting chapter is that describing the various forms of duodenitis, a clinical entity which is sometimes overlooked; allied to this is the question of duodenal diabetes, on which the author has made original observations.

Duodenal ulcer receives full attention both from the medical and the surgical point of view. Prof. Kellog's classification for treatment into surgical, medical, and borderline groups is to be recommended as a useful working conception when the important decision as to choice of treatment has to be made. Many medical régimes are discussed and wherever possible the proportion of cures likely to result from the adoption of any one is given. The statement that 90–95 per cent. of chronic duodenal ulcers are cured by gastro-enterostomy is only true if the standard of cure is not very strict, as a more careful perusal of current literature would reveal. A report of cases ten years after operation would be interesting and perhaps lead to some modification of present views. In the treatment of hæmorrhage from a duodenal ulcer Prof. Kellog allies himself with the majority of surgeons in counselling medical measures during the time of active bleeding and a surgical operation as soon as seems practicable. Gastric lavage is recommended. The lack of any consideration of the actual problems of surgery for hæmorrhage is a serious omission in a monograph of such size. A well-compiled section is that on duodenal obstruction. Surgical procedures are described in the last chapter of the book. They are excellently illustrated as indeed is the whole work. The volume is a notable contribution to medical literature, for not only does all significant knowledge on the more common affections of the duodenum find a place, but also knowledge of the rare forms of disease. Moreover the information is set out in a manner pleasing to read and easy to find. As a work of reference it should be in the hands of all gastro-enterologists, medical or surgical.

Surgery of the Thorax

By T. HOLMES SELLORS, B.M., M.Ch. Oxf., F.R.C.S. Eng., Assistant Surgeon to Queen Mary's Hospital for the East End. London: Constable and Co. Ltd. 1933. Pp. 519. 22*s*. 6*d*.

THIS book embraces the surgery of all the thoracic organs. The principles are sound and well expressed, and correct emphasis is laid on the important points. The opening chapter on anatomy and physiology is one of the best, and particularly interesting sections are to be found on lung movement and the mechanism of open pneumothorax. The general remarks on X ray diagnosis are excellent, and we are glad to see that the author stresses the value of lateral X ray views in cases of lung abscess. In the description of bronchoscopy, which is mentioned under operative technique instead of under diagnosis, where it properly belongs, Mr. Sellors says that extreme extension of the neck is necessary; most authorities emphasise the importance of flexing the cervical spine. The chapter on operative technique is sound as far as it goes, but here, and elsewhere in the book, there are not sufficient details and too many alternatives are mentioned without any guiding remarks to assist the choice. In the section on acute empyema the author distinguishes the synpneumonic from the metapneumonic empyemas, but, rather surprisingly, he insists on closed drainage for the latter group; he goes so far as to say "open drainage is only permissible when the mediastinum is fixed, and, though commonly practised, has nothing to justify its performance in the present era of surgery." This is not the view generally held. In this same chapter Mr. Sellors explains clearly how and when to put the tube in, but he fails to mention a point of almost equal importance—namely, when to remove it. In the chapter on pulmonary tuberculosis the reasons and indications for surgery are well stated. The book also contains short chapters on the surgery of the diaphragm, heart and pericardium, œsophagus, and sympathetic system (angina pectoris and asthma). At the end there is a helpful bibliography arranged under subjects.

The impression given by the book is that the expert will find therein little to supplement the judgment he has himself been able to formulate from his practical experience. But if the detail is insufficient to be of much guidance to the operating surgeon the principles enunciated are sound, and anyone reading it will come away with a clear understanding of essentials. The book is admirably suitable for the needs of those who want an introduction to what has become a very big subject.

The Physiological Effects of Radiant Energy

By HENRY LAURENS, Ph.D., Professor of Physiology in the Tulane University School of Medicine, New Orleans, Louisiana. An American Chemical Society Monograph. New York: The Chemical Catalog Co. Inc. 1933. Pp. 610. $6.

IT is difficult to understand for whom a book such as this is intended. It deals at great length with the

scientific study of the effects of radiant energy, quoting innumerable authorities, and on the other hand makes many statements regarding the treatment of disease with ultra-violet radiation which experienced clinicians would hesitate to accept. The chapter dealing with the physics of radiant energy contains much that is good, but the style in which it is written, with continual references to the authorities quoted, makes it difficult to read. The discussion of the effects of radiant energy on metabolism covers 224 pages and the bibliography 17 pages. Much of it refers to careful experimental studies, but more discrimination in the selection of the work described, and a statement of the facts which have actually been proved, would have made the book more interesting and more readable. That much labour was involved in the compilation of such a volume can well be believed; and anyone engaged on work along similar lines would find here useful references to the many papers which have appeared in foreign literature. But except as a guide to the ground already covered it is hard to believe that anyone would willingly wade through this strange mixture of spectrophotometry, biochemistry, and popular medicine.

Holt's Diseases of Infancy and Childhood

A Text-book for the Use of Students and Practitioners. By the late L. EMMETT HOLT, M.D., and JOHN HOWLAND, M.D. Tenth edition. Revised by L. EMMETT HOLT, Jr., M.D., Associate Professor of Pediatrics, Johns Hopkins University; and RUSTIN MCINTOSH, M.D., Carpentier Professor of Diseases of Children, Columbia University, and Physician-in-Chief to the Babies' Hospital, New York City. London: D. Appleton and Co. 1933. Pp. 1240. 42*s*.

BEFORE the appearance of the ninth edition of Holt and Howland in 1926, both the authors were dead. Dr. Howland had, however, before his death rewritten and rearranged much of the work, and the book was up to date, compact, and had the value which attaches to a record of personal experience and observation. Much of this has been lost in the present edition, which has been greatly added to by contributors who had no hand in the original. The book has certainly gained a more modern outlook but has lost much in personal approach.

It remains, however, a valuable and comprehensive text-book. The rewriting of chapters on diseases of the blood, nutritional disorders, allergy, and deficiency diseases (the word appears in this edition for the first time) has been necessitated by the great advances in medical knowledge of these subjects during the last five years. New chapters have been added on immunology, burns, dwarfism, Schilder's disease, and many other subjects. All this has caused an increase of bulk of 220 pages, which is intensified by the heavily loaded paper upon which the book is printed. There is however a great improvement in the reproduction of the many excellent illustrations. The book is a good example of American thoroughness, and as a work of reference will continue to be widely used.

Journal of Pathology and Bacteriology

THE July number (Vol. XXXVII., No. 1) contains the following papers: Some Effects of Artificial Pneumothorax on the Circulation, by R. Hilton (London). The amount of air breathed is at first increased, afterwards diminished.—The Filtration of Spirochætes through Graded Collodion Membranes, by E. Hindle and W. J. Elford (London). The sizes deduced from filtration correspond fairly well with those obtained by dark-ground photography; no evidence was obtained of any specially minute phase.—The Active Immunisation of Pheasants against Fowl Tumours, by C. H. Andrewes (London). The Rous sarcoma can be propagated in series in pheasants; birds resisting repeated inoculation with tumours to which they are relatively refractory become immune to the Rous tumour.—Further Serological Studies on Fowl Tumour Viruses, by C. H. Andrewes (London). A very technical paper from which it emerges that all fowl tumours have some degree of antigenic relationship.—Rats as Carriers of *Streptobacillus moniliformis*, by Winifred I. Strangeways (London). This microbe causes a disease in mice, and has once been identified in a human epidemic; a proportion of wild and tame rats harbour it in their noses without suffering from any illness.—Multiple Toxins Produced by Some Organisms of the *Cl. welchii* Group, by A. T. Glenny, Mollie Barr, Mona Llewellyn-Jones, T. Dalling, and Helen E. Ross (Beckenham). An interesting contribution towards unravelling the relationships of the organisms which cause gas gangrene, lamb dysentery, and sheep diseases. Each variety produces several distinct toxins.—The Cultivation of the Virus of Rift Valley Fever, by R. D. Mackenzie (London). Successfully carried on in mashed chicken embryo in Tyrode's solution.—The Effect of Experimental Portal Congestion on the Absorption and Excretion of Water, by J. McMichael and F. H. Smirk (London). Obstruction of the portal vein delays the absorption of water from the bowel.—The Formation of Green Pigment from Hæmoglobin by the Pneumococcus, by P. D'A. Hart and A. B. Anderson (London). The green colour is not an optical illusion; it is formed by a defined enzyme system but its nature is unknown; it does not correspond with any known derivative of hæmoglobin.—A Virus Disease of the Canary of the Fowl-pox Group, by F. M. Burnet and J. E. Barnard (London). The virus is fatally pathogenic to sparrows and canaries, mildly to pigeons, hardly at all to fowls. It causes a histiocyte reaction with epithelial proliferation and inclusion bodies, and can be well grown in the chorio-allantoic membrane. Filtration and microscopy agree in making the diameter of the particles about 0·15 μ.—Congenital Cystic Disease of the Lungs Associated with Giant-cell Hyperplasia of the Lymph-glands, by D. H. Collins (Liverpool). In a male aged 15 months.—Observations on Striated Muscle, by W. G. Millar (Edinburgh). The finer details of striped muscle are well shown by Kull's mitochondria method, and post-mortem and pathological changes may be conveniently studied.—Cellular Response of Vitreous Humour to Injections of Bacterial Blood and Vital Dyes, by W. A. Gray (London). A polynuclear is followed by a macrophage reaction; the cells are mainly derived from the wound of entry, but they come later also from the optic disc and the ciliary body.—The Application of Vital Staining to the Histogenesis of the Rous Sarcoma, by A. Haddow (Edinburgh). The tumours produced by the injection of cell-free filtrates come from the histiocytes of the recipient.—Malignant Leiomyoma of Kidney, by W. E. Cooke (Wigan). Unique.—A Filter-passing Micro-organism Cultivated from Epidemic Influenza, by I. McIntosh (London). An opacity of anaerobic broth with certain samples of horse serum has been carried on for many generations from the lungs of fatal cases of influenza. It is stable and actually resists boiling for a few minutes.—Horgan and Marshall's Blood Tellurite Medium for Isolation of *C. diphtheriæ*, by R. A. Q. O'Meara and H. J. Parish (Beckenham). A useful selective medium.—Concentration of Hæm-agglutinating Type Sera, by R. A. Q. O'Meara (Beckenham). Freeze, allow to thaw, and take the lowest layer.—Primary Carcinoma of the Gall-bladder with Unusual Metastases, by D. F. Cappell and G. R. Tudhope (Dundee). The widespread glandular growths led to a diagnosis of lymphadenoma.

THE LANCET

LONDON: SATURDAY, JULY 29, 1933

DROPPING OUT OF MEDICAL BENEFIT

LAST week in a memorable speech at the twenty-first birthday celebration of national health insurance Mr. LLOYD GEORGE said he rejoiced to see the tree which he had planted in 1912 grow and bear abundant fruit in the improvement of the health of the community; and he made the forecast that at the Representative Meeting of the B.M.A. there was one resolution which would not be carried, which would not even be moved—namely, a resolution demanding the repeal of the medical benefit of the National Health Insurance Act. He was more than right. The subject which took deepest hold of the meeting was the feeling that, in the near future, a substantial proportion of those who now enjoy it are faced with the prospect of losing this benefit. As a result of the National Health Insurance and Contributory Pensions Act, 1932, something like 100,000 people, it is estimated, will be thrown out of insurance on Dec. 31st of this year. Sir HENRY BRACKENBURY, in the debate reported on another page, suggested that this estimate probably falls far short of the true figure. The situation which will arise when the Act comes into force is causing anxiety for several reasons. In the first place these patients will no longer be entitled to care by the doctor of their choice but must be attended by the public assistance medical officer. He will probably share their reluctance, for no medical officer wants to be overwhelmed with patients who are strangers to him and whose care has long been the concern of other practitioners. As Dr. OSCAR WILLIAMS pointed out, he cannot be expected to feel the same interest in these newcomers as he does in patients whom he has been attending over a long period. Moreover, it means that patients who in reasonable times are workers will be thrown into the company, and share the status, of those who have been receiving relief for years, and whose standards of respect may have been lowered thereby.

What to do in this dilemma was keenly discussed. A rupture in the relations of doctor and patient, all agreed, would be a disaster. Some of the suggestions made were clearly impracticable—for example, the proposal that local authorities should continue to pay insurance subscriptions in order to maintain these patients in benefit. This, it was pointed out immediately, would create a privileged class of persons under public assistance, a situation which could not be permitted. There is only one procedure, in Sir HENRY BRACKENBURY'S opinion, under which the relations between doctor and patient can be preserved, and that is the adoption by local authorities of the open choice method in appointing district medical officers. Under this system, all local practitioners in an area who are willing to accept service with the authorities may be appointed and employed on a basis of remuneration either for each item of service or by a capitation fee. This plan has been put into practice already in Fife and is working successfully there, but as one of the speakers at the meeting remarked, Fife is only a small part of Scotland, and it remains to be seen whether the system would work on a larger scale. It is evident, if this plan is adopted, that the interests of district medical officers already holding appointments must be protected—a point which the Council of the Association noted in their annual report, but without suggesting how it should be done.

The position fully justifies a trenchant question put recently by Sir HENRY at the section of preventive medicine of the congress of the Royal Sanitary Institute: whether, in fact, national health insurance is not beginning to fail of its national purpose? His own reply to the question of large groups dropping out of benefit as a result of economic stress was this: An effort must be set going at once to make the provision by some other method more all-embracing, or it must be arranged that these persons shall be retained within the scheme, so far as medical benefit is concerned, by securing a properly calculated amount by way of premiums paid on their behalf. We believe that to do this should not be beyond the wit of those who have drawn up the medical benefit code. It must be done if health insurance is not to fail in some degree of its national purpose.

TUBERCULOUS BACILLÆMIA

THE study of tuberculous bacillæmia has been one long story of alternating success and disillusionment. The bacteriologist's nightmare is suddenly to realise that he has failed to make the crucial control experiment, and that like those foolish men in Robert Boyle's "Sceptical Chymist" in searching after truth, he has brought home from his travels not only precious gold and silver "but apes and peacocks too." In a memorandum issued this week by the Medical Research Council[1] Prof. G. S. WILSON has traced the history of tuberculous bacillæmia from the earliest work of WEICHSELBAUM in 1884 to the latest records of Prof. E. LÖWENSTEIN, of Vienna, and those who have essayed to follow him. The early experiments were all made by various methods of direct microscopic examination of films stained for the tubercle bacillus, and, as Prof. WILSON points out, the degree of discordance was such that it is impossible now to accept the findings at their face value—indeed, at any value at all. Some workers found large numbers of bacilli in the majority of their cases; others, like ROTHACKER and CHARON, encountered bacilli so infrequently that they actually spent 15 hours examining each preparation. Artefacts are legion—fuchsin or hæmin

[1] Medical Research Council, Special Report Series No. 182. Tuberculous Bacillæmia. By G. S. Wilson, with appendices and notes by Herta Schwabacher, C. C. Okell, and E. A. Wood. London: H.M. Stationery Office. 1933. Pp. 145. 2*s*. 6*d*.

crystals, fibrin or disintegrated leucocytes, not to mention scratches in old slides. But still more disconcerting are the saprophytic acid-fast bacilli, found both in old distilled and in tap water, which gain access to laboratory reagents. Dr. HERTA SCHWABACHER, who published two years ago a case which at the time appeared to accord with LÖWENSTEIN'S experience,[2] has recently demonstrated the constant presence of these bacilli in material from cold-water taps, frequently in such numbers that a single loopful of water spread on an albuminised slide showed several groups of them, and EICHBAUM found them particularly abundant in the hemp leather and rubber washers on water taps. Fortunately hot-water taps appear to be clear. Prof. WILSON points out that the records even of guinea-pig inoculation tests are not always reliable, since they may be vitiated by faulty methods of examination. Many workers seem quite incapable of distinguishing between true inoculation tuberculosis and the numerous naturally acquired diseases to which caged laboratory animals are liable, and this incapacity confuses the issue not only in the study of tuberculous bacillæmia but in other instances, such as the so-called filtrable virus of tuberculosis. Critical examination of large numbers of published records leads Prof. WILSON to conclude that genuine tubercle bacilli have probably been demonstrated by the animal inoculation method in the blood in about 4·9 per cent. of patients with severe pulmonary tuberculosis, in 36·4 per cent. with miliary or meningeal tuberculosis, and in about 2·7 per cent. with non-pulmonary tuberculosis.

With the introduction of methods of growth on culture media of tubercle bacilli from human blood a new era of investigation began. Before the work of LÖWENSTEIN, to which we have drawn attention on various occasions in our columns, some 500 odd cases had been examined by cultivation methods with only six recorded positives. The Löwenstein technique originated in 1905, but only within the last two or three years elaborated for the diagnosis of tuberculosis in man, seemed to have changed the picture completely. An exact account of the results obtained in Prof. LÖWENSTEIN'S laboratory in Vienna is difficult to obtain owing to the multiplicity and reduplication of the publications; moreover, Prof. LÖWENSTEIN has been generous in his hospitality to visiting research workers who have often published results rather hastily. Hence we have a large "corpus" of published work which, as tabulated in the monograph, extends over nearly three pages, and totals over 4000 cases. Apart from the high percentage of positive findings in known cases of tuberculosis the results of the Löwenstein school are noteworthy for two outstanding facts: (1) the completely negative results in 3000 control cases, and (2) the numerous positives in diseases hitherto regarded as not of tuberculous origin. Though, as has been said, the assessment of the figures is difficult, it is estimated that tubercle bacilli have been isolated from the blood stream during life in about 40 per cent. of patients with pulmonary tuberculosis in all stages of the disease, in 80–100 per cent. with miliary, meningeal, or intestinal tuberculosis, and in 40–60 per cent. with laryngeal, renal, skin, or surgical tuberculosis; whilst a tuberculous bacillæmia has been found in 67 per cent. of patients with articular rheumatism and polyarthritis, in about 50 per cent. with diseases of the nervous system (multiple sclerosis, and so forth), and in a number of cases of miscellaneous diseases such as endocarditis and tenosynovitis.

These claims have naturally led to large numbers of control investigations on the part of other workers in different parts of the world. Prof. WILSON summarises them in two groups, one containing records of positive results in however small a proportion, the other comprising entirely negative results. The contrast between the frequency of positive results reported from LÖWENSTEIN'S laboratory in Vienna and those reported from other sources is striking, though wide differences in technique make it difficult to express this contrast statistically. Amongst many other factors the interpretation of the microscopic and macroscopic positive cultures are not the least of the obstacles to right assessment. No suggestion is made that LÖWENSTEIN has not from time to time cultivated genuine tubercle bacilli from the blood of human patients. Furthermore, the laboratory workers who have used his medium almost invariably speak well of it, and a few think it may even replace the old Dorset egg medium. The crux of the matter rather lies in the explanation of the presence of the acid-fast bacillus. Whence has it come? Is it a true tubercle bacillus in every case? On these points workers have been satisfied with far too lax a criterion of identification, and as the memorandum conclusively shows, many saprophytic acid-fast bacilli are masquerading about the world as genuine tubercle bacilli—probably a far larger number than the uninitiated realise. The Ziehl-Neelsen technique is absurdly easy to apply, and it has been too readily taken for granted that it is fool proof. Prof. WILSON adds to his comprehensive memorandum an addendum which is full of constructive suggestions on the avoidance of errors. If all reasonable precautions are followed, there is no reason why the new knowledge contributed by LÖWENSTEIN and many other bacteriologists should be misinterpreted, any more than improvements in motor construction should make cars more difficult to drive.

[2] THE LANCET, 1931, i., 1130.

THE THERAPEUTICS OF MALARIA

THE report[1] just issued by the Malaria Commission of the League of Nations was written by Lieut.-Colonel S. P. JAMES, and adopted, after discussion and amendment, by a committee consisting of C. D. DE LANGEN, P. MÜHLENS, P. NOCHT, G. PITTALUGA, and EDMOND SERGENT. It has, then, behind it a weight of experience regarding treatment which is probably unequalled

[1] Quart. Bull. Health Organisation League of Nations, June, 1933, p. 181.

in any other publication of the kind. It is a closely reasoned piece of writing, which shows strikingly how the work rendered possible by the discovery of the curative effect of malaria on general paralysis—work carried out largely in this country and under Colonel JAMES's inspiration—has turned a stagnation of malarial knowledge into a rapid current. These last few years have made evident how dissimilar is the virulence displayed by different races of the same species of malaria parasite. For instance, the virulence of the Madagascar strain of benign tertian parasite—the one in general use in mental hospitals in England since 1925—is such that the closest medical attention is needed during illness, for if this is not afforded the strain has shown a mortality-rate of between 10 and 14 per cent.; and there are also certain strains of malignant tertian parasite which are much more dangerous than others. Moreover, the various strains do not react alike to drugs, and this makes it very difficult to compare the records of observers in different parts of the world.

Originally the Commission embarked on an essentially economic problem—the attempt to reduce the price of quinine; but their aims have since extended themselves widely, and the problems which they now consider in this their third general report are various. There is first the problem of true causal prophylaxis—the search for a drug which in non-toxic doses will destroy injected sporozoits. For this purpose quinine has proved valueless. Plasmoquine protects, apparently with certainty, in daily doses of 0·08 g. for three days and thereafter of 0·06 g., but at this dosage it is too toxic for general use for a period longer than a week in all. We possess then no usable causal prophylactic drug. The alternative, clinical prophylaxis, is in effect the curing of slight clinical attacks of fever; it merely keeps the parasites within certain bounds, and it is better effected by a daily dose of 0·3 g. of quinine than by a weekly one of 1·0 g. A dose of 0·1 g. of atebrin has proved yet more satisfactory in short experiments, but whether it can be tolerated for a long time is unknown, and it has the unpleasant effect of turning the skin temporarily yellow. In Salonica clinical prophylaxis kept the allied armies in being, the German forces serving as unwitting controls. In treatment, the point on which the report repeatedly insists is that the essential factor is the host's own natural defensive mechanism, and that while this may be helped by specific drugs it may equally be impaired or even suppressed by giving these in too large doses or for too long a time. Falling in with this, it is the Commission's deliberately expressed opinion that it is seldom or never in the best interests of patients to attempt to combine treatment of an acute attack with prevention of relapse. For the former, quinine and atebrin are advised, it being noted that the toxic effects of plasmoquine seem to be enhanced by fever and anæmia. After the primary attack has been checked the best practice, it is held, is to wait for a recrudescence and treat it as the primary attack was treated, and, if others occur, to begin to use the specific remedy at a later period and to use it more sparingly than at first. Regarding gametocyte therapy—the use, that is, of a drug to destroy or emasculate gametocytes before they are taken up by anopheles—it is emphasised that in the great majority of cases these bodies are not present in the peripheral blood. They seem to be attributes of the newly infected case, whether infant or newcomer in an endemic area; in deliberate infections they are found in numbers in primary attacks and early recrudescences, and thereafter diminish progressively with each relapse. Since they are probably formed from schizonts, their preventive therapy consists in the destruction of these by drug treatment in primary and early attacks. Nevertheless, there is no drug which will entirely prevent their appearance, though plasmoquine in a dose of 0·04 g. or perhaps of 0·02 g. will emasculate circulating crescents for three days. The Commission feel that this subject has received less study than it deserves. They give valuable information on the results of investigation in the past, and equally valuable indications as to the lines which future, much needed, study should take.

From all this it is very clear how individual a matter the treatment of malaria should be, and how great are the difficulties of best dealing with the infection in the mass. Indeed, the Commission look forward to a time when blind mass treatments—herd treatments as they are probably better called—will be replaced by a rational scheme based on intensive clinical and parasitological studies, conducted continuously for a long period on selected individuals at particular age periods.

THE SURGERY OF THE BLADDER NECK

AT the International Congress of Urology, held last week, the discussion that provoked most difference of opinion was that on surgery of the bladder neck.[1] It was obvious to those who listened that urologists have not yet reached unanimity as to the value of perurethral operations in the treatment of obstruction of the bladder neck. Whilst Prof. MARION recognised that perurethral surgery has a limited utility in the relief of such obstruction, certain representatives of the American school of urology were prepared to employ it not only in cases of dysectasia without enlargement of the prostate but also in cases in which the volume of the prostate was considerably increased. Prof. HUGH CABOT went so far as to state that the day had almost arrived when only exceptional cases of prostatic obstruction would be treated by enucleation. American opinion would appear, therefore, to have swung very far in the direction of regarding perurethral resection as the ideal form of treatment for enlargement. As an indication of the change that has taken place in America may be mentioned the statistics from the Mayo Clinic,

[1] See THE LANCET, July 22nd, p. 216.

cited by CABOT. In the year 1928 something less than 20 per cent. of cases of enlargement of the prostate were treated by perurethral methods; two years later 84 per cent. of patients were submitted to perurethral resection, and in 1932 as many as 88 per cent. Dr. W. F. BRAASCH, from the same clinic, gave it as his opinion that within a short space of time perurethral methods will have been brought to such a state of perfection that it will only be necessary to subject some 5 per cent. of cases to the older operation of enucleation. Whilst these views cannot be taken as typical of those of American urologists in general, they at any rate indicate that our colleagues across the Atlantic have outlived the hostility that for long existed towards the perurethral method of treatment. Ten years ago Dr. J. S. CAULK, of Louisville, was treating patients by means of his cautery punch in lonely splendour. He was regarded by his colleagues as an enthusiast who had lost his sense of proportion. Five or six years ago some of the urologists who are now whole-hearted supporters of perurethral surgery returned from a visit to CAULK's clinic kindly tolerant but unimpressed by his pioneer work. At the present time CAULK is evidently regarded by American urologists as the man who has laid the foundations of the newer methods of treatment.

In this country opinion has swung less to either extreme; it has never in the past shut its eyes to the possibility of relieving certain cases of obstruction by means of diathermy, and does not in the present hail it as the supplanter of the older methods. Such exponents of perurethral methods as Mr. J. EVERIDGE, Mr. KENNETH WALKER, Mr. OGIER WARD, and Mr. T. J. MILLIN, are agreed [2] that perurethral resection has a definite place in prostatic surgery, but it would seem that none of them are treating more than some 20 per cent. of their cases by such methods. Whether this proportion will be increased as the fashioning of perurethral instruments achieves greater perfection remains to be seen. Although great progress has been made in improving the efficiency of the tools used in the operation, it must not be forgotten that resection of the prostate through the urethra is a difficult procedure which can never be regarded as belonging to the realm of minor surgery. As much judgment and skill are required in dealing with the prostate through the urethra as in removing it suprapubically. Amongst other difficulties that are to be met with is that of selecting cases suitable for treatment. Even a skilled cystoscopist may fall into error in estimating the size of a prostate, or in deciding how much tissue it will be necessary to remove in order to restore to the patient normal micturition. In this connexion Mr. OGIER WARD's modification of the McCarthy transurethral electrotome, by means of which the size of the prostate can actually be measured in centimetres with a fair degree of accuracy, should be of great value.

The time for passing a final judgment on the scope of perurethral methods in the treatment of enlarged prostate has not yet come. Before we can do so we must be in possession of details of a very large series of cases treated by such means. These must necessarily include data as to age, nature of the symptoms, length of their duration, quantity of residual urine present, cysto-urethroscopic condition, degree of local infection, renal function, blood pressure, and the state of the pulmonary and vascular systems. We have need of statistical data rather than of vague generalities. When these data have been provided and carefully studied we shall be able to arrive at a well-founded opinion of the value of perurethral operations and of the permanency of the results that they yield.

[2] See THE LANCET, 1933, i., 1180.

ANNOTATIONS

THE WORK OF THE MINISTRY OF HEALTH

THE fourteenth annual report of the Ministry of Health, which has now appeared,[1] provides an informative survey of public health work, dealing in particular with housing and town planning, local government and local finance, and National Health Insurance. The report is a broad record of the more important business transacted by the Ministry during the year and does not attempt to cover matters of routine or detail, while the annual report of the Chief Medical Officer of the Ministry will as usual be published separately. Sir Hilton Young, in a brief preface, points out that the National Health Insurance and Contributory Pensions Act, 1932, which received Royal Assent in July of that year and came into operation on Jan. 1st last, has effected certain changes devised to preserve the financial stability of the whole scheme of National Health Insurance. Thus further provision has been made for the continuance in insurance of those suffering from prolonged unemployment who would otherwise have been no longer insured, when the prolongation of the Insurance Act, 1931, ceased to function at the end of 1932. Under the new Act unemployed insured persons, who have exhausted their ordinary rights, are kept in full insurance for pensions up to the end of 1935, having to prove year by year that they are unemployed and are seeking work; in addition they are provided with medical benefit during this current year, and on resuming employment can requalify for benefits on favourable terms.

The report is both voluminous and lucid on the subject of economy in the public health services, showing the policy of the Department during the year to be that of a steady attention to economy, avoiding unnecessary expenditure and overlapping services, but at the same time aiming steadily at the progressive development of those public health services which are of urgent importance. The subject of housing and town planning is very fully dealt with, as would be expected having regard to the special attention which was devoted in the year under review to the problems of slum clearance and re-housing The great amount of house-building which took place immediately after the war, and which, at varying

[1] Fourteenth Annual Report of the Ministry of Health, 1932–33. H.M. Stationery Office. 5s. net.

rates has since been continued, is now generally seen to have been disorderly, the particular classes of houses being unevenly represented so that the needs of the poorer members of the community remain unsatisfied. The local authorities have been accordingly urged to concentrate on the provision of houses to be let at the lowest possible rates, while during the year under review conditions arose which made it possible to contemplate the bringing back to private enterprise the business of building houses for the working classes. A Departmental Committee on housing was set up, with Lord Moyne as chairman, the report of which body is awaited with interest, for though the terms of reference do not concern the question of lower rents, the possible influence of public utility societies may lead to fruitful counsel.

The sixth section of the report deals with the constitution and activities of the Welsh Board of Health, under whose administration a system of survey of the counties and county boroughs by the medical officer of the Department has been instituted. The surveys have involved the examination of public health services in some detail, but do not disclose that there is any one service which calls for special criticism. The general message, however, emerges that there is emphatic need in rural Wales for a further enlightenment of the inhabitants in matters pertaining to personal and domestic hygiene and diet. A timely recommendation further is that expectant mothers in remote country districts should come into the towns for confinement.

AORTIC VALVULAR DISEASE

THE change which has taken place in the attitude of cardiologists towards valvular disease is well illustrated in a recent paper on disease of the aortic valves by Dr. Maurice Campbell and Dr. J. H. Shackle.[1] Aortic valvular lesions may be due to rheumatism, syphilis, or atheroma; but, although the mechanical results of the lesion may be similar, the natural history of these three types of aortic disease is very different. Cardiac rheumatism is essentially a disease of young people; it is a disease which attacks the mitral valve more often than the aortic, and in two out of every three cases of rheumatic aortic incompetence in this series mitral stenosis was also present. Syphilis and atheroma, on the other hand, never attack the mitral valve. They are diseases of later life, syphilitic aortitis being rare before the age of 40, and atheroma before the age of 50. Fifty seems to mark the parting of the ways. Campbell and Shackle found that whereas 90 per cent. of their rheumatic cases were under that age, 90 per cent. of their atheromatous cases were over it. Again, whereas before the age of 50 rheumatism is a far commoner cause than syphilis of aortic valvular disease, after 50 twice as many cases were due to syphilis as rheumatism. This difference in age-incidence is associated with a difference in prognosis. The writers of this paper consider that the average expectation of life in the rheumatic type is over 20 years; a large proportion of the syphilitic patients die within two years of the appearance of symptoms.

Tables of percentages are apt to be dull reading, but Campbell and Shackle make some interesting comparisons, in round figures, between the various groups of aortic patients and the various lesions which they exhibit. For instance, rheumatic aortic disease uncomplicated by mitral stenosis was found to be twice as common in boys as in girls, despite the fact that among the female patients four-fifths were rheumatic, as against three-fifths of the males. Taking the series as a whole, Campbell and Shackle found that rheumatism was about four times commoner than syphilis, and ten times commoner than atheroma, as the causal factor. Angina was often the most prominent symptom in patients of the non-rheumatic group, in which it was present in 40 per cent.; on the other hand it was noted in only 5 per cent. of the rheumatic cases. The opposite is true of auricular fibrillation, which was found almost exclusively in the rheumatic group, and in them was much commoner in patients in whom the mitral valve also was affected.

Investigations such as this show that if we are to get a true picture of disease we must think in terms of ætiology rather than of structural lesions. Aortic regurgitation is to be regarded not as a diagnosis, but as a signpost pointing to cardiac rheumatism, cardio-aortic syphilis, or atheroma, as the case may be.

[1] Guy's Hosp. Rep., 1933, lxxxiii., 168.

SIDELIGHTS ON FAMILY INSURANCE

Two points of human interest are to be found in the otherwise rather technical pages of the new blue-book (Cmd. 4376, 2*s*.) on industrial assurance and life assurance on children under 10. The first is the fact that this class of insurance encourages what many critics regard as the economic waste of lavish expenditure in connexion with death in working-class homes. The scope of policies taken out by parents and other relatives on the lives of children is restricted by statute to the payment of "funeral expenses" and the amounts payable are limited to a scale prescribed according to the age of the child. Policies taken out by relatives who have a statutory right to do so on the lives of parents or on the life of a brother and sister are similarly restricted in scope. The committee's report, which forms the blue-book, emphasises the fact that much of this business of assuring the lives of relatives is conducted without the knowledge of the persons whose lives are assured. Insurance agents object strongly to the official proposal that the person whose life is proposed for assurance should be a consenting party. "I would like to insure my father or mother," says a son or daughter, "but I do not want them to know." One agent told the committee that as much as 90 per cent. of the business would be lost if the written consent of the person to be assured were made necessary. The insurance offices insist that an agent shall "see" the person in question; the agent pays a tactful visit to the house without disclosing his purpose; having achieved his "view" and having found the object apparently in good health, the agent goes off and fixes up the policy. The committee, among other recommendations, advises that a policy on the life of another person should not (except where parents insure children) be effected without the consent of that person; the committee recommends that signed consent should be required before issue of the policy.

A second point is the curious evidence that family insurance of the kind described above constitutes in some cases a not unattractive form of speculative investment. There is nothing to suggest any sinister intention on the investor's part, but the system is obviously one which requires vigilance. The committee cites an instance brought to light in a local bankruptcy court. An insolvent tradesman was found to be paying 9*s*. a week in premiums on 18 industrial policies on the lives of himself and almost all the members of his family. Asked by the official receiver why he wanted to insure his grandfather, the insolvent answered that he thought it would "come in handy if anything happened."

Asked further whether the assured relatives agreed with him in hoping that the insurance money would "come in handy," he replied, "They didn't know about it; they hadn't to pass the doctors because the amounts weren't big enough." The committee finds itself unable to resist the conclusion that this humble tradesman, in thus burdening himself with premium payments of 9*s*. a week, was deliberately gambling on human life. Some of the policies were probably illegal as being effected on persons outside the permitted list of relations, and it is significant that those persons "didn't know about it," and "didn't have to pass the doctors."

ABDOMINAL INCISIONS

THE nature and lines of incision through the abdominal wall are many and various, depending, as they do, not only on the site of the operation but on the taste of the operator; in all cases, however, there is the natural desire to leave the wall as little damaged as possible. Dr. Francis Davies and Mr. C. P. G. Wakeley,[1] writing from the anatomical side, draw attention to the advantages of transverse incisions. The main anatomical points on which they insist are first, the fact that the action of the muscular wall as a whole is to produce a transverse pull; and secondly, that the direction and disposition of the nerves in the wall makes them less liable to effective injury in a transverse cut, especially in the upper abdomen. The descriptive distribution of nerves in the body wall has been altered considerably by anatomists during the last decade, but the general lines of direction remain, and there seems to be no question that the value of the transverse incision is well based on this ground, for it is likely that post-operative herniæ are consequent on injuries of nerves more than on other lesions in the wall. Longitudinal cuts, when lateral to the paramedian line, divide nerves of necessity and are also subject to the transverse pull of the wall. Davies and Wakeley recommend a paramedian incision, with splitting of the rectus, for sigmoid colostomy; here the overlap in innervation of the muscle obviates subsequent weakness in sphincteric function. Definite recognition of the position of the nerves in the wall of the belly is clearly important when planning extensive abdominal incisions with an eye to subsequent function.

THE SECRETARY TO THE MEDICAL RESEARCH COUNCIL

Prof. Edward Mellanby, F.R.S., who has been a member of the Medical Research Council since 1931, has been appointed to succeed the late Sir Walter Fletcher as its secretary. Prof. Mellanby was educated at Barnard Castle school and Cambridge University as a scholar of Emmanuel College. From Cambridge he went to St. Thomas's Hospital, where he gained many distinctions. He was appointed demonstrator of physiology in 1909, resigning this post on his election in 1910 to one of the first Beit Fellowships. In 1913 he was appointed to a chair of physiology in the University of London (King's College for Women), and since 1920 has held the chair of pharmacology at Sheffield University. Prof. Mellanby's experimental work on rickets, especially on the relative importance of diet and confinement in the production of rickets in puppies, excited widespread interest from its first publication in book form as No. 61 of the special report series of the Council in 1921. He has since played a large part in the discoveries which have not only harmonised the two rival theories of the causation of rickets, but have enabled a rational plan of prevention and treatment to be built up. Last year he was awarded the Royal medal of the Royal Society for this work. He has also done original research in many other fields, among others upon the properties of alcohol under the ægis of the Medical Research Council. The trustees of the late James Maxwell Grant Prophit have just granted him, on the recommendation of the Royal College of Physicians of London, a studentship in cancer research, while he was recently designated Sheild professor of pharmacology at Cambridge, an appointment which may, at the discretion of the trustees, terminate with his tenure. The Royal College of Physicians of London elected him Oliver Sharpey lecturer in 1922 and Croonian lecturer in 1933. Prof. Mellanby assumes full duty as secretary to the Medical Research Council with the commencement of next year.

[1] Australian and New Zealand Jour. Surg., 1933, vii., 381.

THE KITCHENER SCHOOL OF MEDICINE, KHARTOUM

IN 1924 the Sudan Government opened a medical school with the object of building up a corps of Sudanese doctors who would be specially trained in the peculiar requirements of the country and gradually replace the Syrian and other doctors recruited from abroad so that, except for a few British specialists, the whole Sudan Medical Service would be native. Ten students were therefore selected from graduates of the Gordon College and were given a four-years' course of sound scientific medical training, shorn as much as possible of non-essentials. This daring experiment has attracted severe criticism sometimes amounting to ridicule, but there seems to be every prospect that the critics will have to modify their opinions. The fourth report of the school, covering the years 1931–32, shows that in every year, except 1926, 8 to 10 new students were admitted; of a total of 84 students, 34 have graduated, 35 are still under training as medical students or as sanitary officers—an alternative career offered to students who are not quite up to the medical standard—and 15 were advised to retire as unsuitable. Of the 34 graduates, the nine who passed at the beginning of this year have, as usual, been sent to the larger hospitals for a post-graduate year in house posts. Of the remaining 25, four have shown outstanding character and ability and are medical officers in charge of four of the larger hospitals. Eighteen are said to be thoroughly competent and reliable in posts of unsupervised responsibility, and some of them may well take their places with the first four. The remaining three are competent under supervision and will, it is thought, probably develop enough responsibility to act alone. Since these native doctors need less leave than Syrians and can take it at any time, they saved the Sudan budget a sum of £E14,000 in 1933 alone.

Candidates spend a preliminary two years studying biology, chemistry, and physics at the Gordon College and another year at the medical school. In their second year at the school they learn anatomy and physiology, the course being strictly limited to knowledge which will be of practical use. The third and fourth years are given to professional study in hospital, and the post-graduate year is said to be equivalent to the fifth year of an English course. The final examinations are always supervised by an assessor unconnected with the Sudan. Mr. Warren Low, who acted in this capacity last year, states that the complete training is equal to a five-years' curriculum in England and that at least four of the graduates would have satisfied the examiners at a

qualifying examination in this country. These results, he says, can be accounted for only on the assumption that the eight students have been personally and individually coached by teachers of the greatest enthusiasm and devotion. They show what can be done by careful selection, intensive individual training and a rigid adherence to practical needs. In January the school lost a great friend and benefactor in the death of Ahmed Bey Hashim El Baghdadi. Ahmed Bey was a Persian who came to Khartoum as a poor man just after the conquest; he became a successful merchant and when the school was founded he put all his money in trust for it, keeping only a life-interest, of which he gave £300 a year for the maintenance of students.

VISCOUNT BURNHAM

By the sudden death of Lord Burnham the country has lost a great public servant, whose activities formed part of our social history. His special claim to the gratitude of the medical profession is the interest that he manifested in Epsom College, of which establishment he had recently become president, in succession to Lord Rosebery. His sudden death is a real loss to the College, for his interest in its affairs had become great and personal. At the funeral, which took place at Beaconsfield on Monday, the Council of Epsom College was represented by Mr. Hollis Walker, K.C., while at the memorial service at St. Margaret's, Westminster, on the following day, Mr. Fleuret represented the Council, the headmaster and certain masters and senior boys being present.

The arrangements in connexion with Founder's Day will remain unaltered.

MILK-BORNE DISEASE

Exact data on the frequency of milk-borne disease are not easy to obtain. Tuberculosis of bovine origin and undulant fever occur sporadically, and their incidence cannot be ascertained without special inquiry. Individual cases and small outbreaks of scarlet fever, septic sore-throat, diphtheria, and enteric fever due to infection by milk usually attract little attention, and the real source of infection may not even be suspected. It is, in fact, only when these diseases occur in epidemic form, usually in urban areas, and when a common origin can hardly be denied, that the infection is likely to be traced to the milk-supply. It is hard to be sure even about the definite milk-borne epidemics, because so many of the minor outbreaks are not reported, or the records are buried in the pages of the medical officer of health's annual report. This state of affairs is probably not peculiar to this country. It is comforting, however, to learn that, whatever the real frequency of these outbreaks, it is, at least in some parts of the world, beginning to decline. Thus Dr. George H. Bigelow and Dr. Roy F. Feemster [1] are able to report that during the three years 1930–32 only nine outbreaks of this type were recorded in the State of Massachusetts, compared with 45 in the 1911–15 quinquennium. The reduction has been steady, and the reasons for it are not far to seek. The total amount of milk consumed per head of the population has remained approximately constant for the last ten years, but there has undoubtedly been increasing care to safeguard the milk-supply. Tuberculosis amongst cattle, as is well known, is much less common in the United States than in this country, and by the pursuit of an intelligent eradication policy many States have now, with the coöperation of the Federal Government, succeeded in eliminating this disease or reducing it to very small proportions. Most of the larger cities now insist that all milk except that from tuberculin-tested herds, shall be pasteurised, while a few cities insist that even the milk from tuberculin-tested herds shall be pasteurised. Since the amount of certified milk consumed raw is very small, and has of recent years been falling, so that it represents only 0·62 per cent. of the total milk consumed, it follows that almost all the milk offered to the public has been pasteurised. The smaller cities and rural districts are not so active in milk control work, and one of the most striking facts brought out in this report, and in other recent reports on the prevalence of milk-borne diseases in the United States, is that the incidence of milk-borne epidemics is becoming more and more restricted to these smaller units of the population. From the large towns they have been practically banished. Our American colleagues have realised two main facts: first, that milk is one of the most nutritious, and incidentally economical, of foods; and secondly, that raw milk, however clean, can never be guaranteed to be free from pathogenic micro-organisms.

[1] Amer. Jour. Pub. Health, June, 1933, p. 571.

A SUBSTITUTE FOR CALF LYMPH

It has been recognised for some time that our standard methods of producing vaccinia virus might be improved upon. Calf lymph is never sterile, and though modern methods of preparation free it from all the pathogenic and most of the non-pathogenic organisms, great care and labour are needed to bring this about. Consequently investigators have sought other sources of virus. The possibility of using organs other than the skin and less liable to contamination has been tested by Levaditi, who in 1923 claimed success with safety for his neurotesticular strain of vaccine. This is a sterile product, but the hæmorrhagic and necrotic lesions it evokes in animals, and its affinity for nervous tissue, make its safety suspect especially in view of the possibility of post-vaccinal encephalitis. The success of tissue culture in the cultivation of viruses at once suggests another way of attacking the problem. A simplified form of tissue culture has been used for this purpose by T. M. Rivers,[1] who grows the virus in a medium of minced chicken embryo suspended in Tyrode's solution. By this method he gets a sterile product of considerable potency that has already been tried successfully in human vaccination. Rivers's culture virus originated from a dermal strain rendered free from contaminating bacteria by passage in rabbit's testicles. This treatment, however, has not altered the type of lesion that it produces or its virulence, and it is therefore free from the objections that can be made to the use of Levaditi's neurovaccine. A third method of producing virus has arisen out of the work of A. M. Woodruff and E. W. Goodpasture [2] on the cultivation of fowl-pox virus in the chorio-allantoic membrane of the developing hen's egg. Later, in collaboration with G. T. Buddingh, they succeeded in cultivating vaccinia also in the same way. In order to get a sterile virus for infecting the eggs they used Levaditi's neurovaccine. Their product would therefore have been open to the same objections, and they did not in fact use it for human vaccination. In our present issue, however, Lieut.-Colonel W. D. H. Stevenson and Dr. G. G. Butler report the successful cultivation of a dermal strain of virus by a modification of

[1] Jour. Exp. Med., 1931, liv., 453.
[2] Amer. Jour. Path., 1931, vii., 209.

Woodruff and Goodpasture's technique. Their vaccine is sterile, the method is not as arduous or as expensive as the production of calf lymph, and the yield is excellent. Their virus is free from the objections that can be made to neurovaccine, and it is, at least in theory, superior to that of Rivers in that the seed virus comes direct from dermal lesions, and has not been passed in testicles. Stevenson and Butler are cautious about using this vaccine in human work, and emphasise the necessity of testing it in animals first and of ensuring that its virulence, affinities, and immunising power have not been altered by growth in eggs. This they now propose to do. It is to be hoped that the result of their work will be satisfactory, for their vaccine seems to represent a definite advance and to be free from the objections to which calf lymph is open.

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MEASLES MORTALITY

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BEFORE considering a scheme to reduce the number of deaths from measles I have set out a few epidemiological facts gathered from the present and past epidemics which bear upon practical action.

Epidemiology

Measles is Unavoidable.—It is essential to recognise that sooner or later practically everyone suffers from an attack of measles. Almost all elementary school-children have been attacked before they leave school (Table IV.), and it is a distinct asset for them to be immune to a disease so frequently epidemic. The adolescent and adult who escape measles in school life often suffer severely later when they can less easily afford time off work. Until the spread of the disease can be controlled, it is best to regard an attack as an insurance against further trouble.

Case-mortality.—It is well known, although seldom taught, that the case-mortality of measles is low; for instance, in the present epidemic in Brighton 2402 cases are known to have occurred, and there have been 30 deaths, giving a case-mortality *on known cases* of 1·2 per cent.; only nine deaths occurred in home-nursed cases. The cases and deaths were distributed as shown in Table I.

TABLE I.—*Cases and Deaths in Age-groups*

—	Months.				Years.						
	0–3	3–6	6–9	9–12	1–2	2–3	3–4	4–5	5–6	6–10	10+
Cases	—	5	24	32	137	198	150	327	551	842	136
Deaths ..	—	—	2	1	14	5	3	3	2	—	—
Case-mortality	—	—	8·3	3·1	10·2	2·5	2·0	0·9	0·36	—	—

In the last 28 years there have been 478 deaths attributed to measles in Brighton, distributed as shown in Table II.:—

TABLE II.—*Age-distribution of Deaths in 28 years*

—	Months.				Years.						Total.
	0–3	3–6	6–9	9–12	1–2	2–3	3–4	4–5	5–10	10+	
Deaths in 28 years ..	5	7	21	46	162	86	47	30	66	8	478

It is evident from the figures in Table I. that relatively the case-mortality is high from 6–12 months, is highest from 12–24 months, and diminishes rapidly in the second, third, and fourth years.

Incidence at Varying Ages.—The incidence of measles is low in the first year, but rapidly increases thereafter up to school age. Table III. shows that even when exposed to infection young infants frequently escape attack.

The figures in Table IV.A have been obtained on a municipal housing estate to which families of not less than four (usually parents with two or more children) were sent with consequent increased opportunity of child contact. Table IV.B gives similar information for a working-class district in the town. In both districts considerable percentages escaped infection at the dangerous age-periods, but these percentages were less in the suburb, although the housing conditions were ideal, owing no doubt to the larger families and increased density of child population.

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—	Age of exposure in months.												
	0–1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12	Totals.
A.	—	—	—	1	1	5	4	7	10*	10	8†	4	50 } 116
N.	7	8	9	7	7	7	5	3	5	4	3	1	66 }

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Percentages.	Age in years.							
	Under 1	1–2	2–3	3–4	4–5	5–6	6–10	10–15
Had measles before epidemic ..	—	—	4	25	35	48	75	95
Infected during ..	21	36	36	21	36	34	16	1
Not attacked ..	79	64	60	54	29	18	9	4
Actual number of children	38	36	72	67	94	113	372	290

B

Had measles before epidemic ..	—	—	1	7	27	29	69	90
Infected during ..	13	24	29	32	27	46	17	2
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many others are developing the disease there about the same time, and everyone is finally infected. In Brighton home contacts continue to attend *infected* schools, but non-immunes are excluded from non-infected departments.

School Closure.—The Board of Education do not advise school closure as the chances are that even if the school outbreak were stopped the school would be reinfected later. School and Sunday school closure is useful at times to stave off the outbreak to milder weather. The great disadvantage of both school holidays and closure is that new cases are not notified, and the health authorities get out of touch with the individual cases, and cannot advise the calling in of a doctor for the patient and serum treatment with a view to modification of attack in contacts under school age.

Class Closure.—If the first case in a department is promptly notified it seems reasonable to attempt to stop school infection by closing the class for one week, one week after infection. In practice class closure has had very limited success.

HOME NURSING

By notifications from school, from the health visiting staff, &c., the medical officer of health gets to know of a majority of infected homes, the mothers are warned of the seriousness of the disease and the need of medical supervision. The general practitioner knows that he can call in the district nurse, so that serious cases have both medical attention and home nursing to their great benefit.

HOSPITAL TREATMENT

If medical officers of health examine their death returns they will find that a large number of the deaths occur in hospital nursed cases; in the present epidemic 21 out of a total of 30 deaths occurred in hospital. Many of us used to attribute the high mortality in hospital to the fact that the worst type of case was removed to hospital, also that these cases were often poorly nourished children from unhealthy homes. Experience tends to show that whilst the above are potent causes of the alarming case-mortality in hospital, the chief cause is the rapid dissemination throughout measles wards of organisms giving rise to fatal broncho-pneumonia. It is usually best, however bad the home conditions and however poor the nursing, to leave even the severe measles case at home, warm in bed with the window open. Until, in hospital, each patient can be nursed in a well-ventilated cubicle or be nursed under open-air conditions the patient will do better at home.

Suggested Methods of Control

Home contacts for the reasons stated above should not be excluded even from infant departments except they attend uninfected schools. *School closure* should only be used to stave off epidemics to milder weather, for instance by the prolongation of the Christmas holiday; Sunday schools should be closed at the same time. *Class closure* is at times useful, and head teachers should be warned of the importance of immediate notification, particularly of the first case in school.

Exclusion of the under fives should always be considered when a school is known to be infected, and is useful in severe weather and in unhealthy areas if the children are of poor physique and live in unhealthy surroundings. It is also important as the four year olds more often than older children have younger children at home at the dangerous age-periods.

The Child under School Age.—Local authorities can do most good by concentrating their attention on children under school age, and particularly on the child aged from 6–36 months old when the case-mortality is highest. There is no doubt that if children at those ages could have their attacks delayed to the next epidemic, or have their attacks modified if infected, then there would follow a steep fall in measles mortality. Our real problem is to devise means to secure these objects.

Information to and Education of Parents.—When measles invades a district the mothers should be warned of the presence of measles in the neighbourhood, and it should be pointed out that whilst measles is not a dangerous disease to normal children of 5 and over, it is very dangerous to children aged 6 months to 3 years. Those who have children under school age should be advised—

(1) not to allow their children to mix with other children for at least the three months that measles is prevalent in their district; also

(2) that if they have, at an infected school, older children who have not been previously attacked, they should communicate with the education authority so that if protective serum is not available, those children may be kept at home, and by escaping attack themselves, prevent infection of their younger brothers and sisters.

The difficulty is to make parents understand that if the attack can only be delayed until the next outbreak two or three years later, the younger children will have passed the dangerous age. At present, mothers are simply told that measles is dangerous, and they naturally will not believe it as they see all around them children at the older ages being attacked and quickly recovering. As insufficient distinction is drawn between attacks in older and younger children, most mothers with young children say "they've got to get it some time, so the sooner it is over the better." In this way, on account of faulty education, the one and two year olds are exposed to unnecessary risks. I feel sure that education is of primary importance in the reduction of measles mortality.

Serum Prophylaxis.—It is quite possible to abort or modify measles attacks with convalescent and adult human serum, and, if a sufficient supply is available, there is no reason why, if a school-child is attacked, his younger brothers and sisters at the dangerous age-periods should not be protected from severe attacks. In Brighton, when cases of measles are notified from school, the homes are visited and mothers are invited to take their young children to the sanatorium for injection of adult serum; at times the doctor visits the homes and injects serum. Unfortunately, because of ignorance and prejudice only a few mothers have taken advantage of our offer, and it is evident that better education is necessary and that injections must be made available at more convenient centres. Dr. R. N. Walker who has controlled prophylaxis here reports that up to date the injection of 44 young children in their homes was followed by abortion of attack in 23 cases, modified attack in 14 cases, and apparently unmodified attack in 7 cases; amongst these there were no deaths.

Summary

What I want to emphasise is the need of a fuller recognition of the fact that measles is unavoidable, and that under present circumstances the exclusion of school home contacts is quite futile. Seeing that such is the case the Board of Education would greatly assist local authorities by withdrawing its advice as to the exclusion of home contacts from school; this equally applies to chicken-pox. What is really

required is the abandonment of the old methods and a concentration of our attention on the dangerous age-periods, and the education of parents (1) as to the advantages of delay of attack until a relatively safe age-period has been reached, or alternatively (2) as to the benefits of prophylactic injection with a view to ensuring aborting of attack or a mild attack. Of almost equal importance is the need to warn general practitioners that however serious the case and however poor the home, the child will do better there than in the ordinary hospital ward.

MEDICINE AND THE LAW

"Medical Officer of a Parish"

A CASE decided recently by Lord Fleming in the Court of Session in Scotland makes interesting reading in relation to compensation rights. The action was brought by a member of the medical profession against the county council of Wigtown for a declaration that when, under the Local Government (Scotland) Act, 1929, the functions of a certain parish council were transferred to the county council, the plaintiff, "being the medical officer for that parish," was transferred to, and became an officer of, the county council; that he was entitled to hold office under the county council by the same tenure and upon the same terms and conditions as applied to his employment under the parish council; and entitled to receive the same remuneration. Lord Fleming, however, stated judicially that so far as he was aware there was no statutory sanction for the title "medical officer of a parish." No doubt the old parish council was limited to the parish, it had health duties to discharge, for which it required to employ a medical man or woman, or both, one or more. But all that might stop short of the creation of the title imputed or asserted. He also expressed grave judicial doubt whether the plaintiff ever held, in the sense of the statutes, any "office" at all. Not every employment imports an office. There was an income-tax case which ended only in the House of Lords regarding the correct method of assessing certain officials of a railway company. Of one of these who occupied quite a useful and important post a law lord remarked "this gentleman does not hold an office; he merely sits in one." In searching for the root of the whole trouble in the Wigtown case Lord Fleming arrived at the impression that it was due to a failure to observe that the statutory provisions for transfer of officers were not limited to whole-time officers but extended to part-timers also. Important arrangements concluded between the authorities and the plaintiff on the basis or assumption that he would be entitled to compensation under the 1929 Act ended in smoke, for the Secretary of State decided that it was a total misunderstanding to think that any such compensation was payable, for the sufficient reason that the plaintiff's office, or appointment, or employment, was not abolished. It was transfer, not extinction. In the result the plaintiff obtained the judicial declaration for which he asked. Lord Fleming had no difficulty in disposing of the county council's contention that the Secretary of State went wrong in refusing compensation.

Income-tax on Professional Earnings Abroad

If a London surgeon performs an operation abroad, his fee is liable to United Kingdom income-tax. This point was stated as beyond doubt in the recent judgment of Finlay, J., on the Crown's successful appeal against Miss Lilian Braithwaite. The question had been raised during the argument in the case. If Miss Braithwaite should succeed before a higher tribunal, the legal position of the surgeon might be reconsidered in the light of such a result. The main facts in Miss Braithwaite's case were as follow. She was in the United States in 1925–26, acting, broadcasting, doing film work, and making gramophone records. The negotiations for her American programme had begun in England, but the contracts were signed in America. While absent in the United States she had no place of business in the United Kingdom and no agent; her professional work was being carried on where she happened to be and nowhere else; while she was acting in America, she could not be acting in England. She was assessed to tax under Schedule D ("tax in respect of any profession, employment or vocation not contained in any other Schedule"). Mr. Justice Rowlatt sent her case back to the Commissioners so that they might determine whether she was assessable on the whole of her earnings or only on such earnings as she made in the United Kingdom. The Commissioners thought her American earnings were not liable to be brought into assessment. This decision of fact was important, as the court is often reluctant to interfere with a decision of fact even if the decision is not one which commends itself to the court. Mr. Justice Finlay, however, referred to the words of Schedule D to the effect that tax is charged thereunder on "the annual profits or gains arising or accruing . . . to any person residing in the United Kingdom from any trade, profession, employment or vocation whether the same be respectively carried on in the United Kingdom or elsewhere." Miss Braithwaite's residence in the legal sense was in England. The judge held that she carried on one and the same profession in the United Kingdom and in America. If she went on tour abroad, she would not be exercising one profession in Paris and another in Berlin. She carried on her profession in the year in question partly in Great Britain. This was enough to make her liable to assessment in the United Kingdom for all her professional earnings in that year. The court distinguished the well-known decision in Colquhoun *v.* Brooks, where a firm had a profitable business in Australia but kept the income in Australia—an important point which enabled the firm to defeat the Crown's efforts to bring the Australian earnings within assessment. It is not clear, however, that if Miss Braithwaite's American earnings had been kept in America, they would have escaped.

HANDBOOK OF TUBERCULOSIS SCHEMES.—The seventh edition of this useful handbook is now ready. The book forms a complete directory of tuberculosis work throughout the country. Each administrative area in England, Wales, Scotland, Channel Islands, Northern Ireland, and the Irish Free State is dealt with separately; such details as general and tuberculosis death-rates, provision for treatment under the tuberculosis schemes, and the administrative staff are included. The handbook forms the only published list of tuberculosis officers, and the only complete list of residential institutions for tuberculosis. The valuable charts showing the comparative death-rates in the various counties and county boroughs is of interest and may lead to healthy emulation. The new edition should meet the needs not only of the tuberculosis service but of workers engaged in other branches of social work. It may be obtained, price 5*s*., from the secretary, National Association for the Prevention of Tuberculosis, Tavistock House North, London, W.C.1, or through any bookseller.

BRITISH MEDICAL ASSOCIATION

MEETING IN DUBLIN

PROCEEDINGS OF THE REPRESENTATIVE BODY

THE annual Representative Meeting of the British Medical Association opened at the Royal Dublin Society Hall on July 21st, with Dr. E. K. LE FLEMING in the chair. Mr. F. W. RAMSAY, consulting surgeon, Royal Victoria Hospital, Bournemouth, was elected President of the Association for 1934–35.

The Law Relating to Abortion

Sir HENRY BRACKENBURY referring to a resolution passed at the 1932 meeting in which it was proposed that the Council should consider setting up a special committee to discuss modifications of the law dealing with abortion, said that though this was an important question it was not sufficiently urgent to demand extensive and expensive study at the present time. This opinion was challenged by the Kingston-on-Thames, Brighton, and Warrington divisions, which had introduced respectively a motion and two amendments suggesting that the establishment of a committee for this purpose should not be postponed indefinitely. There was a nice grading in the measures proposed, as Dr. E. R. C. WALKER (Aberdeen) pointed out, caution increasing as one came farther north. Brighton wanted the committee to be set up in the coming year; Kingston-on-Thames would be content to see it "as soon as possible"; Warrington proposed that it should be established as soon as the work of the special committees on nutrition and the medical curriculum, set up by the Council in 1932–33, had been completed; while Dr. Walker himself, on behalf of Aberdeen, suggested that it should be referred to council to consider once again and report on the desirability of setting up such a committee.

Dr. HELEN LUKIS, who introduced the motion for Kingston-on-Thames, gave three reasons for thinking the establishment of this committee a matter of urgency. First, because the legalisation of abortion in some countries, notably Russia, had created a demand for abortion in this country; secondly, because, owing to the economic crisis, and possibly as an offshoot of birth-control teaching, women were having more recourse to abortionists than they had done in the past; and thirdly, because the law was uncertain on this point and juries hesitated to commit themselves upon it. The Association should undertake to consider the law and to give a lead to public opinion, instead of being led by it.—Dr. L. A. PARRY, for Brighton, pointed out that in law the procuring of abortion was punishable by penal servitude for life, and there was no legal exception made for the performance of therapeutic abortion, unless pregnancy had proceeded to the seventh month, and the operation was done to save the life of the mother. Although no one had been convicted for performing therapeutic abortion in England, in a recent French case two doctors had been sentenced for performing an operation which their colleagues thought wholly justified, and the law in France corresponded closely with ours. It was the business of the Association, he thought, to get the law stated in clear terms. No other body was so well fitted to inquire into the subject.

Dr. J. S. MANSON (Warrington) urged upon economic grounds that the establishment of the committee should be postponed until the work of the other committees was completed, but Lord DAWSON OF PENN, although agreeing that the subject was one of great importance, thought that the time was not ripe for a committee to be set up. There was a good deal of quiet thinking, he said, going on in the community over the question of abortion, but it had not yet crystallised sufficiently for official action to be taken. If an inquiry was undertaken now it would retard thought instead of hastening it. Even in a small gathering it was difficult to get people to express their views openly and frankly about abortion, because there was still a certain conflict in their minds. In practice, no difficulties were raised about therapeutic abortion.

Dr. OSCAR WILLIAMS (South-West Wales) and Dr. DAVID MCKAIL (Glasgow) thought it was the business of the medical profession to give a lead in matters of this kind, and not to wait for public opinion to declare itself, and Sir EWEN MACLEAN was also in favour of an active policy. He thought there were many women upon whom abortion ought to be performed for therapeutic reasons, but who were left in danger because their medical advisers were diffident of facing the risks involved. The law required amendment, and he felt strongly that the Council should be instructed to proceed in the appointment of the committee.—He was supported by Dr. H. D. WOODROOFE (Woodstock), who thought that professional responsibility made the study of this question an obligation.—Dr. C. O. HAWTHORNE, in a concise speech, took exactly the opposite opinion. The question, he thought, was entirely legal, moral, and economic, and it was not the duty of the medical profession to inform the public mind upon these issues, nor were doctors competent to do so. Not a committee of medical experts, but a general committee should be appointed to inquire into the law relating to abortion, and let those who wanted it pay for it. The Association ought not to be inveigled into expressing an opinion on a subject beyond its province. Enjoined in these terms to mind its own business, the meeting meekly embraced Dr. Walker's proposal that the matter should receive further consideration by the Council.

The New Pensions Scheme

Dr. H. GUY DAIN (chairman of the Insurance Acts Committee) referred to the pension scheme for insurance practitioners, inaugurated in December, 1932. The response, he said, had already exceeded expectations. To be successful a scheme of this character had to be adopted by a recognised body, such as the B.M.A., and this was the best scheme of the kind available in the British Isles.—Dr. J. A. HOOKER, however, expressed for the Bristol division two objections. The term pension, he said, conveyed to most people the idea of a reward for long and patient service to which servant and master had both contributed. In this case the servant only had contributed, and the name was therefore misleading. Moreover, the degree of family protection given in the early years did not appear to be sufficient. The doctor in his first years of practice wanted to be sure that his family would be covered in the event of his premature death. Most people would rather have a scheme which made better provision for the family even if it meant a smaller pension later.—Dr. DAIN pointed out that anyone who wanted to do so could insure for larger early benefits under the scheme as it stood at present, and the meeting did not support Bristol.

Workers Passing Out of Medical Benefit

The enforcement of the National Health Insurance and Contributory Pensions Act, 1932, which will

put an end to the continuance in insurance of many workers after a specified term of unemployment, will give rise to a new situation at the end of this year. Dr. J. HUDSON, on behalf of Newcastle-upon-Tyne, proposed that the Government should be urged to arrange that persons falling out of insurance should be guaranteed medical attention by the public assistance committees taking the onus, and providing attendance in the same form as that previously carried out by insurance committees.—This tactfully worded invitation to public assistance committees to pay the capitation fee was discussed by Sir HENRY BRACKENBURY, who said that the Insurance Acts Committee was anxious about the position which would arise after Dec. 31st. It was impossible, however, to adopt Dr. Hudson's solution, however desirable. It had been estimated that 100,000 people would be thrown out of insurance at the end of the year, and this was probably a serious understatement. As the law stood these people would be thrown back upon the public assistance authority and the district medical officer for the care of their health. It would be desirable if in some way they could remain under their panel doctors but this was impossible, because they would then constitute a specially favoured class of public assistance persons. The Insurance Acts Committee wanted to secure if possible that these patients should be attended by their chosen doctor. There was only one way in which this could be achieved, and that depended on the goodwill of the public assistance authority. If the authority would adopt the open choice method of obtaining district medical officer services, the relations between patient and doctor need not be disturbed. It was open to public assistance authorities to adopt this method after Dec. 31st, and the patient thrown out of benefit would then become a public assistance person choosing a public assistance doctor. Unless this system was chosen the district medical officer would be overwhelmed by the extra work thrown upon him. The committee had his situation in mind, and in cases where such an increase of work occurred would support the district medical officer in an application for increased emoluments.

Dr. C. E. DOUGLAS remarked that, in Fife, since the enforcement of the Local Government Act, a liaison committee had been formed by insurance practitioners to help the medical officer of health and the public health committee; between them they were forging a system based on the open choice method advocated by Sir Henry Brackenbury.—Dr. S. WAND (Birmingham) also supported the principle of free choice of doctor by patients thrown out of insurance. In Birmingham it was thought that this could be achieved by means of public medical services, and that the public assistance authority should go on paying the subscription for members of a public medical service who were also receiving relief.

The Newcastle motion was withdrawn, but was followed by another on the same lines from Edinburgh and Leith, under which the Minister of Health was to be urged that "it would be advantageous were public assistance committees to arrange for medical benefit to continue to be provided through insurance committees by insurance practitioners" for the patients thrown out of benefit. Despite the fact that it fell outside the region of practical politics this suggestion was heartily debated. Dr. F. K. KERR, who moved it, said that at the end of the year in his district a large number of good-class working people would have to seek their medical attendance in the company of all the toughs and hobos of the neighbourhood; and they simply would not do it. The National Health Insurance Act should go on evolving, and there should be room in it for those who fell out of insurance through misfortune. The change in the law involved a compulsory divorce between doctor and patient, both parties protesting. In some areas the medical officer of health was engaging newly qualified men and women at £200 a year, on so-called part-time service, and unless some effective scheme was adopted there would be an increase in the numbers of these assistants and the foundations of a State medical service would be laid.

Dr. T. F. KEENAN (Reading) said that in industrial areas the population had been deprived of proper food, and they were now about to be deprived of proper medical attention. The meeting should insist, in the interests of the patients themselves, that these people should remain under the National Health Insurance Acts.—Dr. DAIN pointed out that National Health Insurance was, as its name implied, an insurance scheme, and if it was to remain sound it could not undertake philanthropy. It would wreck the scheme if people who had not contributed for two or three years were to continue to receive benefit. If the taxpayer could be persuaded to pay for them to go on, well and good, but it would take a lot of spade work. He hoped the public assistance officers present resented the insinuation that they did not give proper attention to public assistance patients. He commended to the attention of the meeting the action of the doctors of Fife. This was a job for the local authorities, and they should be in touch with the local divisions of the B.M.A., and the committee must depend on the divisions for action in local areas.

Dr. J. C. ARTHUR (Gateshead) said that assuming that the free choice method was adopted by the public assistance authorities, what would the position be of parish doctors already appointed? A grant of half a million had recently been made to local authorities in some distressed areas. Would it not be possible to divert a small proportion—say 3 per cent.—towards keeping in benefit those patients who were being thrown out of insurance at the end of the year?—Dr. OSCAR WILLIAMS (South Wales) disconcertingly announced that as a public assistance officer he did not at all resent the suggestion that he gave less adequate attention to new patients passed on to him from insurance doctors. It was impossible to feel a proper interest in large numbers of patients who did not want to come to him, and about whose case and history he knew nothing. National Health Insurance had been threatened with bankruptcy for three years, and the Government had seen fit to support it; why should not local government continue to do the same in an emergency? In his own district attempts had been made to coöperate with the county council, but though public assistance work had increased enormously the council refused to consider any increase in salaries.—Dr. JAMES DUNLOP (Glasgow) thought there should be more medical men on local government bodies, and that their medical colleagues in the district should coöperate by helping them to find time for such activities. An extension of public medical services might help to solve the problem created by the new Act.

At the suggestion of Dr. DAIN, Dr. KERR withdrew his motion, and a motion put forward by Cardiff and slightly amended was accepted without further discussion. This simply urged the Council to develop further a policy adapted to the needs of the most distressed areas.

Vaccination

Prof. R. M. F. PICKEN moved that local authorities should be empowered to pay the prescribed fees to any medical practitioner in respect of vaccinations performed. The proposal, he said, did not for a moment imply the abolition of public vaccination, but merely meant that the net would be spread a little wider in order to catch more unvaccinated people.—Dr. T. W. WADSWORTH (Liverpool) was for leaving matters alone. He had no difficulty in collecting fees for vaccination from his private patients, whether successful or not.—Dr. OSCAR WILLIAMS thought vaccinations recompensed the public assistance medical officer, to some extent, for his other burdens, and should be left to him.—Dr. E. W. G. MASTERMAN and Dr. E. R. M. MILLIGAN were for referring the motion back to Council, Dr. Milligan because he thought practitioners, before undertaking vaccination, should be conversant with the measures designed to prevent encephalitis.—Dr. J. MIDDLETON MARTIN and Dr. H. M. STRATFORD supported the motion, but Dr. J. A. PRIDHAM solemnly warned the meeting that an inspector would go round and examine their results. How would they like that?—Dr. KENNETH HOPE doubted whether it would increase the numbers of vaccinations performed.—Dr. C. F. T. SCOTT, by way of a deterrent, drew a picture of the public vaccinator surrounded by forms and statistics which had to be filled up in detail.—Dr. F. RADCLIFFE said that it was the first time he had ever heard the Representative Body objecting to the general practitioner receiving payment for something for which at present he was not paid. Moved, possibly, by this taunt, the meeting, after a little more discussion, carried the motion by 90 votes to 40.

Dr. PICKEN went on to propose that the B.M.A., while reaffirming its belief in the efficacy of vaccination in confirming immunity against small-pox, was of opinion that the time had arrived to consider whether greater protection of the public would be afforded by voluntary rather than compulsory vaccination. A law which was not operative, he said, was worse than no law at all, and though vaccination was compulsory in name it was not so in fact. If effective methods were to be adopted for getting vaccination generally accepted again, the stigma of compulsion must be removed.—This lukewarm expression of opinion would not do for Dr. E. W. G. MASTERMAN (Camberwell) who introduced a powerful amendment in the following terms:

> That this Representative Body of the British Medical Association expresses the emphatic belief that efficient vaccination and revaccination provide the only effective method known of preventing the occurrence of small-pox and its dissemination in the community and would welcome any additional methods or variation of existing methods of encouraging a more extended employment of vaccination, and that the Council be instructed to consider any suggested variations.

Owing to the mild form of small-pox which was at present seen in Great Britain, he said, vaccination had not been pushed as much, perhaps, as formerly. But the position would be weakened if compulsion was withdrawn and no other measures for increasing vaccination set up.—Dr. E. H. T. NASH said that mild small-pox had altered the public idea of the disease, and the chance of encephalitis was a menace. So long as there was a risk of the remedy being worse than the disease, the medical profession had no right to insist on its use. The position must be considered carefully before anyone at the present time could be asked to be revaccinated. The entire machinery of preventive medicine had changed since vaccination was introduced, and nowadays an epidemic seldom got away with more than eight or nine cases. He thought more vaccination would be done by voluntary than compulsory measures.—Dr. S. MONCKTON COPEMAN supported the amendment. He was keen on the extension of vaccination as far as possible, and in the most satisfactory manner. Too much of a bugbear, he thought, had been made of vaccinal encephalitis; the number of cases were comparable, perhaps, with the number of people in the British Isles involved in railway accidents in the course of a year. By appropriate methods it was possible in a large measure to prevent encephalitis, which after all was not a sequel peculiar to vaccination; it had been known to occur following measles, whooping-cough, rubella, and varicella, and one epidemic having all the characteristics of vaccinal encephalitis had occurred among children who had never been vaccinated. The meeting followed his lead and passed the amendment.

Medical Education

The Council had appointed a special committee to consider and report upon medical education. The interim report of this committee was presented at the annual meeting for discussion. Sir HENRY BRACKENBURY said that the committee had defined medical study as properly beginning at the point at which the student starts work upon human anatomy and physiology, and they had had to decide what stage he should have reached before he began these studies. All had agreed that the course should not be lengthened. It was generally agreed, too, that the general and medical education of the student should have reached a somewhat higher standard, when he entered on the study of anatomy and physiology, than was demanded at the present time, and the first main change proposed was that he should give evidence of such a higher education standard, and of being well grounded in the fundamental principles of chemistry, physics, and biology in their application to medicine. This groundwork might be acquired at school, university, or technical college. Anatomy and physiology ought to be taught as inter-related subjects, and the main object should be the study of the living rather than the dead body. The committee had suggested that three years and four months should be the period set aside for clinical study. Not less than two years and six months should be spent on the lines of the present curriculum, but with less specialisation. During a period of not more than nine months clinical instruction should be associated with a certain amount of practical experience, and it was hoped that this period would be afforded before the student took his final oral clinical examination. The necessary experience might be obtained in a resident post at an approved hospital, or as a clinical assistant, or as a pupil assistant of an approved general practitioner or medical officer of health, or by regular attendance at hospital practice in a medical school. At the end of the period of two years and six months clinical study, the student would take the major part of his final examination in the form of a written and oral examination, but a second oral examination would terminate his studies at the end of the final nine months period of practical experience.

Dr. J. HUDSON moved, for Newcastle-upon-Tyne, that the time had now arrived when the curriculum of the medical student should include a period of training in an approved general practice or dispensary,

and Dr. A. GREGORY, for Manchester, attempted to modify this by suggesting that only students who intended to enter general practice should be required to have this special experience.—He was seconded by Dr. R. BOYD, but Dr. H. M. STRATFORD said that it was especially the student not going into general practice who needed this experience.—Dr. C. M. STEVENSON recalled the mutability of human aims by pointing out that a student had no idea what he would be seven years hence.—Dr. F. K. KERR agreed with Dr. Stratford, and Dr. Gregory's amendment was lost.—Dr. HUDSON agreed to withdraw his motion, which was largely covered in the scheme set out by the special committee.

Dr. D. MCKAIL agreed that 18 was a suitable age at which to register for medical training. He thought it was difficult to obtain a clear idea of physics and chemistry in the limited time available in a university course, and considered that it was better to spread these subjects over a longer period at school. He suggested that biology should be taught in the sixth term of medical study, so that the student did it as a sort of advanced course after he had learned his anatomy.—Wing-Commander H. M. STANLEY TURNER thought that, at the present time, physiology and anatomy were taught too much as pure sciences. The student's studies should be so arranged that he never lost sight of the fact that he was to be a doctor. Many medical students suffered, in his view, because they no longer got the experience they used to get in the old days as apprentices. He suggested that they should do a term of general practice after qualifying. To be good specialists they must have an idea of general practice.—Dr. M. B. RAY complained that he was always meeting post-graduates at the British Red Cross Clinic who knew nothing whatever about physical treatment. Physical methods were coming more and more into general use, and their study should be included in the curriculum. He added a telling illustration in the story of a doctor who mentioned to the nurse that he had heard diathermy was good for pneumonia, and asked her to pop out and fetch an apparatus and give the patient a treatment.—Dr. J. S. MANSON was disturbed by the phrase "skilled technician," which occurred in the interim report. The student, he said, should be taught that he was entering a profession, not a technical craft. He added, rather cryptically, that he never looked at slaked lime without remembering his entry into the medical profession. The study of biology should not end when the student left the school; it should be carried on into his later training.—Dr. A. GREGORY thought more time and attention should be devoted to medicine than to any other subject in the curriculum. The time at present spent on the study of major surgery was out of all proportion to its importance in medical practice, whereas more time might well be given to minor surgery. The examination system was pernicious, the student concentrating far more on getting through his examination than on acquiring a sound training. It would be helpful if the need for post-graduate training was set out as a necessary corollary in the next report.

Sir EWEN MACLEAN agreed that a higher standard of general education was thoroughly desirable.—Dr. J. W. BONE, although a member of the committee, found a slight blemish in its proposals. He objected to the suggestion that practical experience should be obtained in regular attendance at hospital practice in a medical school, because this was only an extension of the clerking and dressing which were customary at present, and the committee really wanted an improvement on that system. This suggestion had crept in because in certain overseas schools it would be difficult for the student to obtain practical experience in any other way, but the report did not say so, and as this was the easiest method of obtaining such experience it would be likely to become the most popular. Of all the bad ways in which a student could spend the last nine months of study, hanging about the hospital out-patient department was the worst.—Mr. W. MCADAM ECCLES pointed out that at present most of the teaching was done by men who had no experience of general practice, and it was not satisfactory. There was no reference in the report to the type of man who could teach, and this should be included in the final report.—Dr. LILIAN M. DICKSON (St. Pancras), who has taught anatomy for many years, agreed with the opinion of the committee that too much detail was taught, but deprecated the suggestion that only one part should actually be dissected. The student learned with his fingers as well as with his eyes.—Dr. LUCY NAISH agreed that it would be a mistake if the student did not dissect the whole body. He needed a wider knowledge of anatomy than nurses and masseuses who learned anatomy largely from books.—Dr. C. V. BROWN (Manchester) thought that midwifery and antenatal work should receive special emphasis in the curriculum.

In summing up the debate, Sir HENRY BRACKENBURY said that the committee had taken the liberty of assuming the presence of good teachers. One of the first objects of medical education was to give the student a right attitude towards responsibility. The committee wanted the curriculum to be one continuous process evolving from a proper knowledge of the fundamental principles of chemistry and physics and biology. He did not think it likely that the committee would go back on their statement that it was unnecessary for the student to dissect every part, though there was no suggestion in the interim report that only one part should be dissected. The meeting gratefully accepted the report.

Advertising Public Medical Services

Dr. ARNOLD LYNDON introduced a recommendation of Council defining certain terms upon which public medical services might be advertised. Such services, he said, had been in existence in some districts for many years, and the successful ones had not found it necessary to advertise, but practitioners in other areas found it impossible to make their services successful without the aid of advertisement. In London and other industrial areas a large section of the public were unwilling to obtain medical service by the usual general practitioner methods, and were joining hospital contributory schemes in increasing numbers. The Hospital Saving Association (H.S.A.) was a huge scheme of the kind, and had enrolled more than a million members. Persons belonging to the scheme could obtain a voucher which enabled them to receive treatment at hospital without having to see the almoner and submit to inquiries. The H.S.A. was in a position to advertise, and it was to combat this loss of patients that the Council was asking the Representative Body to allow more publicity to public medical services. The Council believed that if all subscribers were told to consult their own doctor, if the service was open to all practitioners in the area, and if the interests of those practitioners who did not wish to join were protected, then public medical services might safely be allowed to advertise.

One of the safeguards proposed was that the words "Consult your own doctor" should appear on all stationery of the service.—Dr. E. R. C. WALKER

(Aberdeen) said that his division thought it would be safe to delete what was after all a slight vulgarity: there was no need to use slogans upon official note-paper.—Dr. LYNDON accepted, and the meeting shared, this view.

Another section of the Council's recommendation required that an arrangement should exist whereby subscribers electing to choose non-coöperating practitioners could receive payment towards the discharge in part or in full of these medical accounts. With characteristic realism, Dr. HELEN LUKIS pointed out that none of the existing public medical services had any machinery by which such a provision could be enforced. Any canvassing was therefore bound to be in favour of the members of the service, and she advised referring the motion back to Council.—Dr. C. M. STEVENSON could see no reason why groups of practitioners should be allowed to advertise when individuals were not allowed to do so. If the motion was passed it would become impossible to combat lay bodies wishing to employ doctors and to advertise.

Dr. E. BRIERLEY objected to the suggestion in the motion that agents should be employed to bring public medical service schemes to the notice of potential subscribers, which he called making use of touts.—But Dr. KEENAN said that there was no intention of touting for patients. The public were demanding an extension of insurance services, and if the medical profession did not undertake to provide it, other people would.—Dr. CECIL BLOMFIELD emphasised the urgency of the position. Unless the loss of patients to other agencies, such as the H.S.A., could be checked it would mean ruin to practitioners in the poorer areas.—Dr. A. MCCARTHY said that in Birmingham the public medical service had been successfully advertised in the local press by means of leading articles on the subject.

Dr. MANSON uttered his usual warning cry at the approach of danger. Advertising was a powerful instrument, especially when used by the medical profession to influence the public mind.—Dr. F. K. KERR pointed out that the meeting was there to make decisions, not to refer things back to Council, and Sir HENRY BRACKENBURY came to his support. The H.S.A., he said, was already influencing the incomes of thousands of practitioners, and it was time the public medical services received equal publicity. The proposal to refer the matter back was concentrating the votes of those who thought the safeguards too weak and those who thought them too strong, and he begged the meeting to be cautious. If representatives felt that public medical services might, upon some conditions, be advertised, would they now direct themselves to deciding whether the recommendation of the Council embodied those conditions.—Dr. LYNDON, too, begged the meeting not to refer the matter back and so leave the practitioners affected without remedy for another year. The warning was taken to heart, and Dr. Lukis's amendment was lost.

Interest now centred upon the safeguards proposed by the Council. One of these—requiring that the public medical service should be approved by the profession in the area as being in the public interest, the relative decision to be taken at a meeting of the profession summoned by the B.M.A.—was challenged by Dr. A. H. MACKLIN. He did not see, he said, that the meeting need be summoned by the B.M.A. rather than any other body of practitioners.—Sir HENRY BRACKENBURY was disturbed; the motion was conferring the blessing of the B.M.A. upon the advertisement of public medical services. If that blessing was to be conferred upon any body of doctors or other persons who chose to summon a meeting he would rather the motion was turned down. The Association could not accept responsibility for seeing that the necessary conditions were fulfilled in such circumstances.—Sir ROBERT BOLAM thought it might be possible to get round the difficulty by putting part of the motion into a model scheme, but after a brief discussion the meeting decided to let this clause of the recommendation remain unaltered.

Dr. E. BRIERLEY then tried to persuade the meeting to delete the words referring to the employment of agents, already mentioned. He was supported by Dr. MANSON.—Once more Dr. KEENAN and Dr. J. H. MELLOTTE (Lambeth) explained that these agents were not touts; they were simply local people who were ready to collect the subscriptions of their fellow workers in offices and workshops.—Mr. MCADAM ECCLES took exception to some of the remarks made about the Hospital Saving Association, with which he was connected. It was dinned into subscribers, he said, that when they went up to hospital they must take with them a letter from their doctor. Sir Henry Brackenbury had said that the H.S.A. was out to take patients from general practitioners, and that was not so.—Whereupon Sir HENRY remarked that he had said not that the H.S.A. was out to take patients from general practitioners, but that, in point of fact, it did.—The motion was further discussed by Dr. S. WAND and Dr. C. E. S. FLEMMING, who wanted the wording changed to make it clear that touting was not intended.—Dr. HAWTHORNE pointed out that the advertising methods to be employed would be in the hands of the medical profession, and there was therefore a reasonable prospect that they would be kept within proper bounds. The amendment to delete the words referring to the employment of agents was lost by 81 votes to 79, and the motion was finally accepted in the following form:

> That the advertisement of Public Medical Services (including the employment of agents to bring such schemes to the notice of potential subscribers) would not contravene the generally accepted view of the profession that the practice of, or association with, advertising by individual practitioners is contrary to the public interest and discreditable to the profession of medicine, provided that the following conditions are satisfied:—
>
> (*a*) That the Public Medical Service is approved by the profession in the area as being in the public interest, the relative decision to be taken at a meeting of the profession summoned by the B.M.A.;
>
> (*b*) that it is the Service which is advertised *qua* Service, and not any individual medical practitioner;
>
> (*c*) that membership of the Service is open to any registered medical practitioner living or practising in the area concerned;
>
> (*d*) that an arrangement exists whereby subscribers electing to choose non-coöperating practitioners can receive payment(s) towards the discharge in part or full of their medical accounts;
>
> (*e*) that all prospective subscribers when approached are advised to consult their own doctors.

Midwifery Problems

Dr. PICKEN said it had been suggested that local authorities might select suitable women to receive training as home helps for employment during the puerperium. Some safeguard was necessary to prevent such people becoming handywomen at the confinement, and it had been suggested that they should only be employed if a midwife was engaged, and only paid if a favourable report was given on them by the doctor or health visitor.—Dr. A. M. SWAN thought this second suggestion laid the doctor open to the danger of legal action, or anyhow to vituperation.

The meeting agreed that local authorities should be encouraged to make available the services of home helps, who would work in accordance with such conditions as would prevent them undertaking the duties of a nurse.

Dr. PICKEN moved that the time was not opportune to press for amendment of the scale of fees paid to medical practitioners called in by midwives.—Dr. MABEL CAMPBELL (Newcastle-upon-Tyne) pointed out that in some cases a doctor might be called in and spend a considerable time on the case before deciding that the patient should go to hospital. This service would only be paid for at the rate of an ordinary visit. Everyone was anxious that the general practitioner should do good midwifery work, and it was not fair that he should be penalised because he thought his patient needed special nursing.—Dr. PICKEN said that the Council had drawn the attention of the Ministry of Health to the ambiguity of the following paragraph which appeared in the present scale :

> Fee for all attendances of a doctor at parturition (that is from the commencement of labour until the child is born), whether operative assistance or not is involved, including all subsequent visits during the first ten days, inclusive of the day of birth, £2 2*s*.

This might be read as meaning that the doctor must attend throughout the confinement in order to obtain his fee. It was the duty of local medical officers of health to decide how this paragraph was to be interpreted ; most of them took it as meaning that the doctor was entitled to his fee if he attended for some part of the period of confinement.—Sir HENRY BRACKENBURY added that only a few medical officers of health had advised their local authorities that a doctor was not entitled to a fee unless he was present from the beginning of labour. It was a stupid interpretation, and not enforced by the Ministry of Health.—Dr. D. LEES (Edinburgh and Leith), with the support of the meeting, asked the Council to give an early opinion on the possibility of more economic use of the existing obstetric material in the country. At present a large number of midwifery cases were used for the training of nurses and health visitors who did not intend to practise midwifery, and last year the Representative Body had asked the Council to consider whether there was any practicable remedy for this situation.

Public Assistance Medical Services

Sir HENRY BRACKENBURY said that data had been collected from 400 public assistance medical officers working on the open choice method—that was to say, the method of appointment and employment of all local medical practitioners in the area concerned, who were willing to accept service with the authorities on a basis of remuneration per item of service or by a capitation fee. From these data it appeared that in a number of cases present holders of such appointments were seriously underpaid, but this was not true of all of them. Any move to ameliorate conditions of service must be made locally, and the Association would give practitioners its support. The Council had outlined the local action which ought to be taken, advising local practitioners to call a meeting of all public assistance medical officers, to collect statistical information, and to approach the public assistance committee. The sympathy of the Ministry of Health had been obtained for cases in which there was a definite increase of work, and the Ministry would encourage local authorities to listen to a plea for an increase of remuneration in such cases. Since it was necessary to show by figures when such an increase had occurred, he implored all public assistance medical officers to keep proper statistics from now on, in order that they might show by comparison that their labours had been augmented.

Register of Technicians

Mr. H. S. SOUTTAR, chairman of the science committee, said that at the suggestion of the Association, the Society of Apothecaries in London had instituted in 1930 a register of Biophysical Assistants to whom doctors could, with confidence, send their patients. This register was to be discontinued, and an independent body was to set up a new and comprehensive register of those engaged in services ancillary to medical work. Details of the scheme were at present in consideration by representatives of the bodies interested, and a further report would be made later.—Dr. M. B. RAY objected to the term Biophysical Assistants as it reminded him of the Bookmakers Protection Association ; and Dr. F. C. MARTLEY wanted to know how a comprehensive register was to be formed.—Mr. SOUTTAR replied that it would be up to those who desired to join the register to submit the qualifications which entitled them to be put upon it. It would consist only of those who applied for enrolment.

Dichotomy

Dr. ARNOLD LYNDON, chairman of the ethical committee, moved that the practice of fee-splitting, commonly called dichotomy—an arrangement between two practitioners whereby, unknown to the patient, one practitioner received part of the fee due to the other practitioner—was highly detrimental to the honour of the medical profession. This practice, he said, was a secret commission, and, as such, illegal. The meeting was anxious to vote immediately, but Mr. N. BISHOP HARMAN said that the resolution ought not to go out without a statement to the effect that the practice was extremely rare. The motion was carried unanimously.

VIENNA

(FROM OUR OWN CORRESPONDENT)

DRAFT OF A NEW MEDICAL ACT

THE Ministry of Public Health has just now forwarded to the representative associations of the profession (Aerztekammern) for consideration a draft dealing with the proposed new regulations concerning the statutes and the rights and duties of medical men practising in Austria. By this Act the present multiplicity of the rules governing the medical practice of a doctor would be done away with. It is proposed to modify the rules at present in force, according to modern requirements and modern hygiene and medical ethics. In future all jurisdiction pertaining to this matter will be enforced by federal legislation, and for the first time in this country the expression "medical practice" is to be strictly defined. The exercise of this calling is to be restricted only to persons who are legally qualified ; the law will stipulate the requirements necessary for starting practice, and the conditions under which permission may be withdrawn. A new feature is brought into force by a compulsory "hospital year," which will be required after the candidate has graduated in medicine. As a rule, public authorities will not be allowed to interfere with a doctor's work or his views. But it has been made clear by certain occurrences that under certain circumstances, such as sudden

attacks of insanity, the authorities must be able to interfere with his activities. The interests of the doctor are, however, scrupulously safeguarded. The practitioner may be struck off the list of doctors only after careful judicial inquiry, and with the consent of the Ministry of Public Health and the local medical association. All laws and regulations pertaining to medical men and medical matters will be referred to these associations for opinion and consent. The title of specialist, as well as that of practitioner, will in future be legally protected. On the other side, the duties of the medical men are clearly defined, who will have to become members of their local associations. A distinctive feature of the new Bill is the extension of power entrusted to these associations. They will not only be able to impose higher fines upon medical men than hitherto in cases of unethical conduct or breach of medical laws, but they will also be able to suspend a doctor from practice for a limited time or permanently. Against this clause very strong objections have already been raised in medical circles, for obvious reasons. It does not appear likely that the right of removing the name of a practitioner from the register will ultimately rest with these bodies. Some of the other provisions of the Act are of interest. In future only those persons will be allowed to practise in Austria who are Austrian subjects by birth or naturalisation, and who possess an Austrian diploma or a foreign diploma recognised by an Austrian university, and also show proof of having served for at least 12 months in a hospital after graduation. A foreign medical man living abroad may practise occasionally, if called in consultation, or in places on the frontier. Foreign medical men studying in Austria may of course act as internes covered by their chiefs. The right to practise may be cancelled or withdrawn, if the doctor loses his or her nationality—i.e., if a woman doctor marries a foreign subject—or if a doctor is declared, after trial in a court, unfit to continue in practice because of insanity, drug addiction, or chronic alcoholism. Practising in two places is not allowed. The doctor must restrict his activities to his regular consulting-rooms, but may, of course, visit patients at their homes. No doctor may have two or more consulting-rooms, except in country places where there is no other medical man. A doctor in practice may not follow any occupation or a trade that would be detrimental to the standing of the profession. No doctor may refuse to render first-aid when able to do so, or to give evidence as witness in forensic cases. Professional secrecy must be preserved unless the judge insists on obtaining exact information. Every medical man must take part in the election of the members of the local association, and must accept nomination as an officer of this body, if he should be elected, unless his reasons for refusal are deemed adequate. An interesting item is also the proposed new regulation that no doctor should be eligible to the panel practice (Krankenkassa) unless he or she has been for at least 10 years a citizen of Austria, and has practised for at least two years in a hospital.

BOYCOTT OF GERMAN DRUGS

The outspoken anti-Austrian and anti-Semitic attitude of the present ruling party in Germany has had the effect that a very large section of the practitioners in this country have decided to abstain from using and prescribing pharmaceutic preparations coming from Germany. This hostile attitude has caused a very perceptible drop in the commercial output of German chemical firms to Austria. A list of remedies of Swiss and English and French origin, suitable as substitutes for the products of German firms, is being circulated amongst the profession, especially for Jewish doctors, who are fairly numerous in our larger cities, and there seems to be prospects of the transference of much business.

PANEL AND CONTRACT PRACTICE

Psychotherapy

THE report of the referees appointed by the Ministry of Health as to whether the treatment of insured persons by psychotherapy is within the range of medical service within the meaning of Medical Benefit Consolidated Regulations has now been received. The decision is that :—

> "Having considered the evidence submitted to us we are satisfied that the psychotherapeutical treatment given by Dr. X. in the four cases before us involved the application of special skill and experience of a degree or kind which general practitioners as a class cannot be expected to possess."

This decision is not unexpected in view of the nature of the evidence at the inquiry, for the doctor in question had studied psychotherapy for a long period and treated about 40 cases psychotherapeutically since 1929. Moreover, the experts on both sides concurred that in these four cases the appropriate treatment had been given, so that the local medical committee proved completely that this particular case came within Paragraph 8 (5) (*b*) of First Schedule, Part I., of the Medical Benefit Consolidated Regulations, 1928. The comments made by the referees on some of the arguments are, however, of interest. One argument used was that as insured persons must be given the opportunity of getting specialist treatment at some hospital or institution gratuitously before they may be charged by their insurance doctor, and as they may be peculiarly ill-fitted to make such a decision, it would not be advisable to place psychotherapy outside the Act, and thus permit practitioners using it to charge for such treatment. The reply to this was that experience alone can show whether persons subject to a psychoneurosis which makes them ill-fitted to exercise independent judgment will in fact be exploited, but "if they were it would not alter our opinion that psychotherapy involves the application of special skill." Another comment is that the expression "skill," having regard to its context, cannot be limited to manual dexterity. Finally, the referees say the required qualification indicated by the words "special academic or post-graduate study" is not satisfied by proof of attendance at a course of lectures alone. What will satisfy that requirement must depend upon the subject of the study. Psychotherapy, which deals with mental as distinct from physical phenomena, requires the adaptation of the mind of the student to conceptions more tangible than those of general medical science, and great care must be taken before a practitioner is held to have had "special study" within the meaning of Paragraph 8 (5) (*b*) of the Schedule referred to above. No mention is made of the third alternative qualification under which an insurance practitioner could claim specialist fees for treatment by psychotherapy, if he is recognised by other doctors in the area as having special proficiency or experience in the subject.

The outcome of this decision will be watched with much interest and some anxiety should the claims materially increase in number.

The Capitation Fee

The Minister of Health received a deputation from the Insurance Acts Committee on July 14th, when the position with regard to the capitation fee was discussed. Dr. H. G. Dain, the chairman of the committee, said that there had been no revision of the capitation fee since 1924, while since then the efficiency of the service had been improved. This was shown by the increased popularity of the medical service amongst insured persons. Since 1924 there had been a substantial increase in the services practitioners were required to render, and he thought they had a good claim for an increase in the fee, after allowing for a fall in costs of living. A revision of the capitation fee had been contemplated in 1932. The national financial crisis had, however, intervened, and practitioners had been confronted with a request to them to agree, and they had agreed, to a deduction of 10 per cent. This had affected them seriously. They had to perform more work for less money and private practice profits had also diminished. Serious hardships had been incurred on the North-East coast and in South Wales, and there was increasing discontent. The Committee wanted to put forward claims for consideration at the appropriate time and they wished to ask the Minister if he thought now was appropriate. They assured the Minister that friendly relations between insurance practitioners and their patients would not be affected, and that they would continue their efforts to give a completely satisfactory service. The Minister, in reply, said he appreciated the clearness and helpfulness of Dr. Dain's statement, and he agreed fully about the improvement in the National Health Insurance medical service. He thought any dissatisfaction among the practitioners was due to the 10 per cent. cut rather than to the basic rate of fee, but there was no evidence of any falling off in the efficiency of the service. The cut was part of a general economy over the whole field of Government expenditure; they had tried to distribute it as fairly as possible and any claim for restoration must be considered as a whole. The time had not yet come at which the restoration of economy cuts could be contemplated, so that he did not think the time was appropriate to advance suggestions for an increase in the capitation fee. If the claim for arbitration were put forward counter-arguments might prevail and the fee might be lowered rather than raised. If the fee were raised the national financial position might necessitate a reduction in the service provided, as an Exchequer grant could not be contemplated.

PUBLIC HEALTH SERVICES

London School-children

IN his annual report as school medical officer for the County of London Sir Frederick Menzies says that for many important criteria of the health and well-being of London school-children the figures for 1932 were the best since school medical inspection was started some 25 years ago. For example, the percentages of children with serious dental decay, adenoids and enlarged tonsils, running ears, hardness of hearing, and lack of personal cleanliness were all the lowest ever recorded. He finds too that the nutrition of the children has been well maintained, the number recorded as subnormal being only 1 per 1000 more than in 1931, and except for 1930-31 being the smallest yet found. When the 1932 figures for nutrition for all the children subjected to routine inspection at the statutory age-groups are analysed, it is found that the nutritional condition of the 8- and 12-year-old children is better than in the previous year; the small decrease in nutrition shown when the figures are aggregated is due entirely to the school entrants—associated probably with the recent epidemic of measles, a disease which notoriously leaves children in a debilitated condition.

Crucial tests of the value of school medical work are the condition of the leavers and the percentage of defects, found at any age, which are adequately treated. The leavers are in better health than their predecessors of a few years ago, and of the children in whom defects were discovered at routine inspections, 81·6 per cent. were undergoing treatment or were discharged before the end of the year as no longer requiring treatment. To quote the words of the report:—

"In 1932 the general improvement which had taken place during the preceding years has strikingly continued and new records have been achieved. Personal hygiene in particular has again made noteworthy advance; the nutritional state of the child while in attendance at school has been maintained. Nowhere is there any sign of falling off. Although minor conditions of departure from health remain common, yet the grosser manifestations of disease are becoming more and more rare. The progress during school life is towards healthier conditions, and the 'leaver' child is the healthiest of all the groups, both in boys and girls, save for a failure to maintain the improvement in dental conditions, and the continued slight increase of spinal curvature in the older girls who, at the end of elementary school life, are growing faster than the boys."

The scheme for the control of rheumatism has advanced; additional beds have been provided at Queen Mary's Hospital, Carshalton. Nominations for hospital treatment under the scheme rose from 943 in 1931 to 1234 in 1932, part of the increase being due to the new arrangement by which the Downs Hospital, Sutton, admitted 138 children convalescent from rheumatic attacks and those who were suffering from advanced heart disease. The ability to provide for these cases, Dr. Banks Raffle says, makes a step forward in the attempt to deal with the problem of the rheumatic child in London.

Owing to the need for economy in the printer's bill, fewer special reports than usual are included; one by Dr. J. H. McIlroy on myopia is to appear in the medical supplement. The reports included are: (1) Dr. E. M. McVail on the two special classes for myopes in the central schools, the results of which are so encouraging both in examination (more than equal to those of the sighted children) and in later life that the system is regarded as worthy of extension; (2) Dr. R. H. Simpson on the effect of provision of meals on nutrition, of which the most important conclusion is that the necessitous children provided with free dinners were generally healthy and in a good state of nutrition; only 5 children out of 174 examined in one part of his investigation were found to be under-nourished. The number is small and perhaps exemplifies the view of Dr. Stockwell, of Leeds, that school meals cannot absolutely compensate for exceptionally bad conditions at home. There are also interesting notes on: (1) The new scheme for the adoption by private

persons of children maintained under the Poor Law Act of 1930. The physical and mental condition of the children is ascertained and a Wassermann test made on each child so handed over, and as a rule arrangements are made for the child chosen to stay with the prospective adopters for a few months before legal adoption is agreed upon. (2) The disinfection of sand pits in nursery schools. Bacteriological examination by Dr. McCartney indicated that this was desirable, and the use of a solution of bleaching powder in the ratio of one pound of the powder to 20 tons of sand was advised; the quantity for one pit in a nursery school may be about two and a half ounces. Another subject for disinfection in nursery schools is the tooth-brush, and Mr. B. Samuel, L.D.S., the Council's consulting dental surgeon advises that tooth-brushes should be soaked weekly for 20 minutes in a solution of 1 in 100 carbolic acid or, alternatively, in a solution of 1 in 2500 thymol. After disinfection they should be thoroughly rinsed in clean water. Tooth-brushes, he thinks, should be renewed when the bristles become loose or worn, the life of a brush being 6 to 12 months.

The report of Dr. E. B. Argles on the place of detention at Ponton-road is briefly summarised, but its tables are retained and they show how much work is carried out on these young delinquents; 1052 children and young persons were admitted in 1932 (an increase of 209 on 1931), each of whom was examined both physically and mentally. From the table of offences it is seen that stealing and allied offences account for 68 per cent. of the charges, and among these is cited the case of a boy of 10, with the height of a boy of 8, who drove a car half a mile in a crowded district without accident. A detailed table of physical defects is given, and it is reported that the general physique and state of the delinquents compares unfavourably with those of London children as a whole; evidence of post-rickets is far more common, while the figures for stammering (1·8 per cent.) and enuresis (2·2 per cent.) are of interest because they are so small. In the table of mental ages it is shown that nearly 30 per cent. were up to or above average, 70 per cent. retarded by from one to six years, including 4·2 per cent. certifiably mentally defective.

Routine Medical Inspection: Its Nature and Frequency

A few months ago, on the proposal of Dr. Somerville Hastings, the L.C.C. asked its education committee to consider whether the equipment provided in medical inspection rooms is adequate, whether enough time is allowed for the inspections, and whether these are sufficiently frequent. On July 19th the special services subcommittee presented their observations on these questions.

In discussing equipment they pointed out that medical inspections in schools must be as homely as possible, and great precautions must be taken not to terrify the children. There would undoubtedly be numerous withdrawals of children from inspection if the methods and instruments of specialist examination were introduced, and these should be reserved for subsequent examination at a treatment centre or hospital if required. "If the ear, nose, and throat were to be investigated in school by special methods there would be no reason why the eyes, lungs, circulatory system, &c., &c., should not also be investigated to a similar extent." The subcommittee find that at a routine inspection session normally lasting 2½ hours each doctor deals with 25 children. This gives an average of six minutes per child, and any attempt to increase the numbers seen is apt to result in a feeling of racing against time. The Board of Education in 1931 expressed the view that an average of about six minutes is reasonable, provided that the medical officer has assistance—preferably from a school nurse—and provided this routine examination is regarded only as a sifting process. The subcommittee think it would be inadvisable in London to recommend that a clerk should be present to undertake the secretarial work; the room already contains as a rule the child, the mother, the doctor, the nurse, the head teacher or representative, and a representative of the care committee—not to mention the child just examined, with parent, and the child being prepared for examination, with parent. Audible dictation to a clerical assistant would involve to some extent infringement of the confidential character of the personal notes made by the doctor.

In deciding on the periods of school life at which inspection shall be made there are many factors which call for consideration. The Board of Education has prescribed, besides examination at entrance, routine examinations at the age of 8 and 12. This minimum, the subcommittee say, has been reached by all education authorities: "London, so far as we are aware, is alone in providing . . . an additional age-group examination, i.e., one in the term before that in which the children leave elementary schools." There are also of course the reinspection and special inspections, and it is calculated that on the average four-fifths of the children on the roll are seen by the school doctors for some purpose or other in the course of the year. Further, every child is seen some three times a year by a fully trained nurse who picks out any requiring special medical examination. "The danger of failure in bringing before the doctor any children whose condition needs it, is small." Last year, however, it was suggested that the times of routine inspections should be altered so as to fit in with reorganisation in the curriculum, and it was proposed that the inspections should be (*a*) at entrance; (*b*) at age 7, corresponding with the change in the status of infant to that of junior scholar; (*c*) at age 11, corresponding with the transfer from junior to senior school; and (*d*) preparatory to leaving school. This plan was held up because the head mistresses of infants' schools objected to two routine examinations coming within the children's life in the infants' department, and because there was some question whether, owing to the need for national economy, the fourth age-group should be retained. The deferring of inspection to the age of 8 means, however, that many possible cases of admission to special schools are not considered in detail till a year after the enforceable age for mentally and physically defective children. The final examination should, it is felt, be continued because it gives a last opportunity of discovering and remedying defects, because examination in the term before children become 14 has an important bearing on their future employment, and for other reasons. The special services subcommittee therefore proposed:—

> That, as from and including Jan. 1st, 1934, the medical inspection of children attending public elementary schools should be made (1) on entry, (2) at or about the age of 7 years, when retardation, dullness or mental defect shall be specially considered, (3) at or about the age of 11 years, and (4) during the last term but one at school; and that the Council be recommended accordingly.

This resolution was adopted by the education committee.

CORRESPONDENCE

VETERINARY EDUCATION

To the Editor of THE LANCET

SIR,—The leading article entitled a Projected Advance in Veterinary Education in your issue of July 15th cannot fail to be of interest to all concerned in medical and veterinary education; but it has been pointed out to me that it may easily convey a wrong impression to those who are not familiar with veterinary education as it exists. The reader may very readily suppose that Cambridge is the first British university to associate itself with veterinary education. This would be an error, for London, Liverpool, and Edinburgh all grant degrees in veterinary science, and have done so for a number of years; veterinary degrees were instituted in Edinburgh in 1911. A considerable and rapidly growing number of B.Sc. (Vet. Sci.) degrees have been conferred, and the list of graduates last month contained a D.Sc. in veterinary science.

I am not in a position to say what exactly the courses of instruction leading to veterinary degrees are in other universities, but in Edinburgh veterinary students are required to attend courses conducted by university medical and science professors and lecturers in the classrooms and laboratories of the University itself. The close association of students prophesied in your article therefore actually occurs.

It has also been suggested that the reference in your last sentence to an "unnatural frontier" may be translated as implying the existence of something that separates the medical and veterinary professions. In Edinburgh, at any rate, there has never been anything but cordial coöperation. This could be shown by the recital of many facts, but perhaps the following will suffice to justify the claim. It is very probable that the Royal (Dick) Veterinary College would not have been founded when it was had it not been for the inspiration, encouragement, and enthusiasm of John Barclay. For many years after the foundation of the College medical classes were thrown open to its students. When the College was incorporated by Act of Parliament and given an independent board of governors, Sir William Turner became the first chairman of the board and took a profound and vigorous interest in the College. The present vice-chairman, to whom the College owes much, is a member of the medical profession.

I am, Sir, yours faithfully,

O. CHARNOCK BRADLEY.

Royal (Dick) Veterinary College, Edinburgh, July 18th, 1933.

*** We welcome Dr. Bradley's letter, with its valuable support of the general thesis upheld in our leading article and its emphasis on the excellent results that have in fact been obtained in Edinburgh. We had not, of course, supposed that any implication could be read into our comment on the Cambridge proposals, suggesting that other universities had played no part in the development of veterinary science. All who are interested know that such is not the case. The Cambridge proposals include features that, so far as we are aware, are novel—for instance, that the veterinary student should spend three years at the university in pre-clinical scientific studies culminating in the Natural Sciences Tripos and a B.A. degree. Dr. Bradley will, we are sure, agree that this approximation of the pre-clinical work of veterinary and medical students will tend "to tighten the links already forged." He will also, we think, agree that the developments of the last 20 years or so, tending to the integration of veterinary and medical science, could be extended over a wide field to the advantage of both professions.—ED. L.

THE FUTURE OF MEDICAL PRACTICE

To the Editor of THE LANCET

SIR,—Having spent 46 years in general practice, I gave up to it the whole of my working life. I think I may claim, therefore, to have acquired not only an intimate knowledge of its professional and social side, but to have had ample time and opportunity to form a just estimate of the calls that general practice makes on the intellectual capacity of its devotees; and what is more important, how far it is possible for any man, however conscientious, to meet these demands. My deliberate opinion is, that the more highly equipped a man is for the task and the more conscientious and thorough he is in his work, the more steadily and surely will the conclusion be borne in upon him that the labour he has been set to do is intolerable and beyond the wit of man to accomplish.

The fallacy underlying the admission of men and women to the medical profession lies in the assumption that those who satisfy the examiners in an academic test are competent to withstand the acid test of practice in all the subjects of the final examination. Candidates are licensed as general practitioners with the tacit assurance that they are competent to treat the thousand ills that flesh is heir to; and to undertake responsibility in every department of medicine. The public has a pathetic belief in the universality of the medical powers of the general practitioner; with what result, doubtless the case-books of consultants and the experience of medical defence associations could unfold.

The subjects of which the general practitioner is supposed to be a master are: medicine, surgery, obstetrics, laryngology, otology, rhinology, dermatology, neurology, pathology, therapeutics, ophthalmology; add some acquaintance with radiology, psychology and psychiatry, parasitology, and orthopædics; a nodding acquaintance with hygiene is of course desirable, and it is not at all infrequent to be questioned on tropical medicine. Knowing all these, he is bound to be a man of infinite variety and most excellent fancy. I am sure when the consultant reads this formidable list, he will be most profoundly discontented with his own capacities, and exclaim with Falstaff: "I'll have my brains ta'en out and buttered and give them to a dog for a New Year's gift."

A comparison with other professions will at once reveal the fact that general practice is quite unique in requiring that a man shall be fully competent to practise every branch of his profession. I use the words *fully competent* advisedly, for incompetence in any department may entail severe punishment. Surely it is not a harsh comment to say that those who are responsible for maintaining this state of affairs show lack of vision? What schoolmaster is asked to teach every subject in the school curriculum? What lawyer practises in every department of the law? What engineer ventures to proclaim that he is fully qualified to give a reliable opinion in every branch of his profession? Even in single subjects like mathematics, physics, and chemistry, we see an increasing tendency, owing to the vast expansion of knowledge, for men to limit themselves to portions.

But the general practitioner, like Bensusan's rustics, "keeps all on keepin' on."

How far the confidence reposed in the general practitioner (that he is competent to practise *all* departments of his profession) is justified, is well seen in the case of midwifery. The General Medical Council require attendance on 20 cases of midwifery, a course of lectures, and some clinical instruction. On this amount of training he is expected to face all the complications of labour that he may encounter—and they are not few. The Departmental Committee on Maternal Mortality and Morbidity would like him "to be able to conduct safely a case of labour, particularly a complicated case." The skill that would accomplish this, the committee rank as equal to that required to meet an emergency in minor surgery! In my opinion there is in this world no emergency to compare with a complicated case of labour; and nothing that so taxes the skill, courage, and endurance of the medical attendant. In the issue of THE LANCET for May 13th last, a very able and carefully considered article on "The Teaching of Obstetrics" was contributed by Prof. Munro Kerr. Prof. Kerr is under no illusion as to the sort of equipment in obstetrics with which the newly fledged graduate takes the road in general practice. The nett result of the present training in obstetrics that the general practitioner receives is that there has been no reduction in puerperal mortality and morbidity. Mr. J. A. Newrick, in a recent address to the National Association of Trade Union Approved Societies in Edinburgh, observed "that it was just as true to-day as it was in 1911, that it was four times as dangerous to be a mother as to be a miner."

General practice as we see it to-day is a relic which has come down to us through the ages. Those upon whom devolves the duty of preparing men for the medical profession have accepted the relic almost as a sacred trust. As the years have gone by and medicine has steadily and enormously increased her boundaries, every advance has been gratefully accepted and in due course pressed into the education of the doctor; without reflecting that the mass of knowledge has grown so huge that it is not within the capacity of any single brain to assimilate, still less to put it to practical application in the service of humanity. In spite of it all, the general practitioner still survives as a kind of universal purveyor.

Of recent years attempts have been made by post-graduate lectures and short courses of study to help the general practitioner. Doubtless all very good; but they leave the main problem untouched—viz., the impossible range of subjects that the general practitioner has to practise. If the present system is to continue, nothing short of six months' leave of absence for study will meet the case; say, every seven years. When the doctor returns after six months he may find his knowledge increased, but his practice seriously depleted and without the material on which to try recent advances in medicine.

Have I anything to suggest of a constructive nature? I have previously referred with great appreciation to Prof. Munro Kerr's article on the Teaching of Obstetrics. Prof. Kerr makes suggestions as regards medical teaching with which I very cordially agree, as I had myself arrived at precisely the same conclusions respecting what he calls "undergraduate study" long before I read his article. By the latter term, he would include instruction in all the subjects of the medical curriculum. In these subjects the student would have to pass an examination; but it would not entitle him to practise. Up to this point I am in absolute agreement with Prof. Kerr. The next stage Prof. Kerr calls "post-graduate study," based upon the assumption that the student is going to practise, *as at present*, all departments of his profession. Prof. Kerr would devote a year to this stage, during which the student would be compelled to hold resident appointments of four months each in medicine, surgery, and obstetrics, but would be excused the latter if he did not mean to practise midwifery. Should he change his mind, he would be obliged to hold the obstetric appointment. If the old-time model of general practitioner is to be retained, I venture to think that in the case of a young man starting practice and without means, it would be almost impossible for him to refuse midwifery. If a man has partners, it might be arranged; but I doubt if he could do so, were he on his own. Refusal to attend a patient in her confinement is usually very much resented. Even when getting on in life, it is very difficult for a man to shake free of midwifery. Most women will not take "no" for an answer.

Believing as I do that it is beyond the competence of any man to be a completely successful "general practitioner," I would suggest, like Prof. Kerr, that the year after "undergraduate study" should be devoted to clinical work. If a man intends to go into general practice, he should select two of the main subjects—viz., medicine, surgery, or obstetrics—and should be obliged to hold resident hospital posts in those subjects, say, for four months each. To these two chief subjects he might add two subsidiary subjects, in both of which he should be required to produce evidence of adequate clinical instruction.

There is no need for any upheaval in the machinery of examinations. The Conjoint Boards of the Royal Colleges have been in existence a great many years and carry out these very duties, but their influence has not been so supreme or decisive as I think desirable. But to give these boards complete authority would be a challenge to the universities, and their admirable and ancient medical faculties. Is all this to be scrapped? I ask, can anyone produce an instance outside medicine in which the possession of a university degree opens the portals of a profession? Is a man who is M.A., B.D., entitled to undertake the duties of a clergyman without further preparation? Can a man who is LL.B., or LL.D., practise as a barrister or solicitor on the strength of it? Is not one who takes an engineering degree required to pass the examination of some institute of engineering? Do not nearly all the educational authorities to-day insist, however brilliant a man's degree, that he shall undergo special training and pass an examination before he can be admitted a teacher? In my opinion a university degree is a thing apart. It is an academic distinction, and should not admit a man to the practice of his profession. Only in the case of medicine do the universities possess this unique power; and it probably goes back to the days when fitness to enter the profession depended on book learning.

In advocating the transference of the sole licensing power to the Royal Colleges, I am aware that I am sailing near that perilous sea of "the single portal," or inviting the retort that a State medical service would meet the difficulties. If the universities are to keep their medical privileges, they could adapt their degrees to the requirements of the directing body of studies. The Syndicate of the University of Cambridge has recently issued an amended report on the Medical Curriculum. The gist of the Syndicate's recommendation is that medical subjects, such as anatomy, physiology, pharmacology, chemistry, bio-

chemistry, and bacteriology shall be brought within the scope of the Natural Science Tripos. The object of these changes is to build preclinical studies on a more assured scientific basis.

Now that a beginning has been made, it is much to be wished that the inquiry be pushed further and the future of the practitioner also determined. The question to be answered is, whether a medical man is any longer capable of acting as a sort of universal medical purveyor; or whether the time has come, when both in his own interests and those of the public, he should be restricted in practice to a limited number of medical subjects. That some reform is necessary in medical practice, I feel sure.

I am, Sir, yours faithfully,

Beckenham, Kent, July 8th, 1933. J. H. E. BROCK.

BLOOD CHANGES FOLLOWING IRRADIATION

To the Editor of THE LANCET

SIR,—I write to give my opinion that it is not possible to assess the value of the findings of Dr. R. H. Simpson and Dr. G. White Phillips, referred to in the tenth annual report of the British Empire Cancer Campaign, since as far as I am aware neither of these researches have yet been published. Furthermore, since the Radium and X Ray Protection Committee have under consideration the question of blood counts in radium and X ray workers, it would be unwise to prejudice the case by premature judgment. It is evident that Dr. Simpson stresses once again the wide variation in normal white cell counts and the danger, which is well recognised, of drawing conclusions from single counts giving figures just within or near to normal limits. This, of course, applies to persons exposed to radiation as well as to patients in general. Dr. White Phillips finds that patients having treatment with radium and X rays do not show blood changes. This is the usual experience except when patients are subjected to a long series of such treatments.

However, as already stated, it is necessary to await publication before giving judgment in detail, more especially as regards the value of blood examinations in persons subjected to radiations.

I am, Sir, yours faithfully,

J. C. MOTTRAM.

Mount Vernon Hospital, Northwood, Middlesex, July 22nd, 1933.

LACTIC ACID AS A FACTOR IN RHEUMATISM

To the Editor of THE LANCET

SIR,—In your annotation of July 1st (p. 33) on the report of the committee that recently considered the problems of rheumatism, you would appear to favour the suggestion that, of the many hypotheses put forward to account for rheumatic disorders, lactic acid as a causative factor may now be ignored. This on the grounds that lactic acid was to be found as much in the normal as rheumatic subject.

Nevertheless I venture to submit that we are far from having done with this particular by-product of fatigue. I suggest that rheumatic complaints are universal because fatigue is universal, and that rheumatism in its chronic forms is less evident in countries wherein a warm, damp heat encourages free and daily skin action. Clinical evidence appears to be growing in volume that in the metabolism of fatigue lies that fine line between physiological acidosis and its pathological equivalent, rheumatism.

The determinant factor would appear to lie in a disparity between the elimination and creation of fatigue products, and in this the skin plays an all-important part. The whole problem, therefore, appears to demand investigation as to the results of lactic acid accumulations in the tissues. It seems highly probable that the acid-base imbalance induced by such accumulation affects the endocrine balance, thereby laying the subject open to the attack of any prevalent bacteria. Those who cannot contemplate any disease except in terms of bacteria might spend a fraction of thought in considering the types of soil upon which such bacteria as they may find appear to thrive.

Space forbids discursiveness on this fascinating problem, but I would just like to enter a mild protest against any facile assumption that lactic acid can be ignored in its relation to chronic rheumatism.

I am, Sir, yours faithfully,

London, W., July 19th, 1933. DRURY PENNINGTON.

"ENDOGENOUS" TUBERCULOUS INFECTION

To the Editor of THE LANCET

SIR,—It has been suggested to me that my paper dealing with the Rôle of Infection for the National Association for the Prevention of Tuberculosis, an abstract of which appears in your issue of July 22nd, implies my acceptance of the theory that adult tuberculosis is a late and separate manifestation of a childhood infection.

I think I misused the word "endogenous" in my paper, and should like to make it clear that I do not accept the theory that adult tuberculosis is a separate manifestation of previous infection. My remark that the majority of cases of adult tuberculosis were the result of an endogenous spread from a lesion, was intended to imply that clinical tuberculosis does not necessarily follow a fixed latent period after exposure to infection as, for example, is the case with measles. If a patient fails to develop measles three weeks after exposure to infection one can release him from quarantine. In the case of tuberculosis, however, a lesion giving no symptom or clinical sign at the time may have formed and after remaining latent, perhaps for years, may break down, release tubercle bacilli into the blood or lymphatic stream, and cause clinical disease of essentially the same type as if there had been no stationary intermediate lesion.

In my opinion the patient who lives in contact with a so-called open case of tuberculosis receives continual and repeated small infections. Many of these completely heal; some, however, remain latent so that one frequently sees somewhat extensive fibrosis in the lungs of such contacts although they have enjoyed good health.

By "endogenous infection" I mean that some lesion has been present in the body, not necessarily since childhood, but for some time without producing symptoms, and it is from this infection that the disease develops. Since the lungs are the big filters of venous blood and disease is often blood borne, it is not remarkable that the lungs should be the organs so commonly infected. In some cases exposure to infection is followed by clinical disease without a definite latent period, and this I referred to as "exogenous infection." All infection originally must, of course, be exogenous.

I am, Sir, yours faithfully,

L. S. T. BURRELL.

Chandos-street, Cavendish-square, W., July 25th, 1933.

SODIUM EVIPAN

To the Editor of THE LANCET

SIR,—My experience with this product differs somewhat from that of the anæsthetics committee of the Medical Research Council (THE LANCET, July 1st, p. 43). Is this to be explained by the

different habits of those submitted to its effects or to a certain chemical change in the product itself when kept for some time in a subtropical region? I am in the habit of using the powder, following the weight-dose ratio, dissolved in 10 c.cm. of distilled water: if 7 c.cm. are given to start with and the patient comes round in about 15 minutes, the remaining 3 c.cm. will give a further anæsthesia of 15 minutes. Evipan has given me a good relaxed abdomen for Cæsarean section and appendix operation. A dose of 3 c.cm. intravenously is excellent to start sleep in some neurotics.

In one case to which I will briefly refer evipan proved to be the ideal anæsthetic.

A woman of 25, pregnant 32 weeks, suffered a fracture-dislocation of the lower thoracic and upper lumbar spine. The dislocation was reduced and the patient was put in the best position possible not to interfere with the pregnancy. Four weeks later, in spite of the utmost care, bed-sores developed on back and buttocks. There was incontinence of urine and fæces. Then signs of pneumonia were found at the right base and the patient seemed in extremis. I thought of saving the child at the expense of the moribund mother, and the choice of anæsthetic arose. Spinal anæsthesia was out of the question owing to the bed-sores; rectal anæsthesia was impossible because of incontinence; inhalation was unsuitable owing to the condition of the chest. Gas-and-oxygen were not at hand. I was left with the intravenous route. Evipan saved the situation; 7 c.cm. of the solution were sufficient for Cæsarean section which took about 7 minutes. After the operation the ileus and pneumonia improved quickly and the patient was able to leave the hospital with a living infant.

Evipan has given me satisfactory results in private practice when an anæsthetist was not available. At a minimal risk intravenous injection offers the surgeon all he needs for minor and some major operations.—I am, Sir, yours faithfully,

M. A. EL MONEIM EL DIWANY,
P.M.O., Shebin-el-Kom General Hospital, Egypt.

July 10th, 1933.

PROBLEMS OF SPINAL ANÆSTHESIA

To the Editor of THE LANCET

SIR,—I am much indebted to Prof. Pannett for his experimental work on spinal analgesia, but in his paper in your last issue he seems to imply that I am employing with percaine solutions a method which he had been using with 1 per cent. novocain—an impression I wish to correct.

The large-volume injection after withdrawing an equal amount of cerebro-spinal fluid was first tried, I believe, unsuccessfully by Le Filliâtre with dilute cocaine, and Prof. Pannett records in his paper of 1929 that he had repeated this method with novocain, also without good results. I claim no share in this useful work but merely the conversion of a rather complicated and unsuccessful method into a very simple and effective one by omitting the withdrawal of spinal fluid, proportioning volumes to spinal measurements and subsequent body posture in order to retain the percaine solution in position with any bias toward posterior roots. This I have termed "the method of direct injection," and regard it as a mere manœuvre in regional anæsthesia. The large-volume direct injection had been previously used, as far as I know, with simple fluid, only in the experimental animal, but I invite correction. Prof. Pannett has made no mention of it previous to my first communication. The test of success is the performance of a partial gastrectomy without general anæsthesia, and I would emphasise Mr. Norman Lake's procedure of blocking the vagus—a valuable addition to what is, for gastric work, an essentially imperfect method.

Much of my work at Charing Cross Hospital is done with ampoules of percaine returned by other institutions to the makers on account of some fancied defect; but while I do not wish to diminish this relief to the hospital finances, it is perhaps worth noting that both chemical analysis and clinical tests show that solutions more than three years old have undergone no change whatever, and that tropical conditions and repeated boiling have no effect on them. It is clear therefore that any failures are likely to be due to faulty injections or too low a concentration in a resistant patient. A 1 per cent. solution of novocain in my experience serves only for a short operation, but a direct injection up the spine of a competent solution leaves very little room for theories.

Pulsation as a cause of spread I brought forward at Eastbourne in 1931 (Brit. Med. Jour., 1931, ii., 488); I believe its main origin is the pulsation of the brain and the large arteries at the base, but I do not think it is a major factor in spread.

I am, Sir, yours faithfully,

W. HOWARD JONES.

London, W., July 23rd, 1933.

THE ROYAL SOCIETY DISCUSSION ON "EXPERIMENTAL PRODUCTION OF MALIGNANT TUMOURS"

To the Editor of THE LANCET

SIR,—Dr. J. A. Murray's letter in your issue of July 22nd, in reply to my own of July 8th, shows that my *caveat* against the undue and exclusive exaltation of the experimental method in cancer research was even more necessary that I had realised. Dr. Murray avoids the issues which my letter raised—issues entirely scientific and in no way concerned, as he appears to imply, with the unimpeachable administration of the Imperial Cancer Research Fund. He dismisses the lymph-stasis theory of the origin of cancer as a mere hypothesis unworthy of his serious attention. Here let me say that he will hear much more of it during the next few years. He does not attempt to meet any of my criticisms, and particularly he fails to explain why the experimentalists have not troubled to study the finer structure of their chosen experimental material, the skin of the mouse. He appears to think that his personal views on cancer involve the policy and prestige of the institution he serves with such distinction, and to interpret reasoned criticism of them as an attack upon that institution. He thereupon gracefully retires behind his committee and refers me to them with the air of a mediaeval bishop remitting a heretic to the civil power.

Dr. Murray's attitude is a remarkable and I think a regrettable one, showing his inaccessibility to observational as contrasted with experimental evidence. To evidence not experimental Dr. Murray presents a closed eye, camouflaged by a telescope of ironic recognition. His attitude is the more surprising since, as he points out, the Imperial Cancer Research Fund exists for the study of cancer in the human race as well as in animals—and in man experiment is barred.—I am, Sir, yours faithfully,

W. SAMPSON HANDLEY.

Harley-street, W., July 25th, 1933.

HEART DISEASE IN SCARLET FEVER

To the Editor of THE LANCET

SIR,—In the annotation in the issue of July 15th which describes Dr. J. Wickstrom's electro-cardiographic findings in scarlet fever, you discuss the ætiology of the cardiac lesions complicating this disease and their relationship to rheumatic fever.

As you say, the clinical features of these lesions are identical with those of rheumatic carditis, a fact which has been well shown by Dr. F. J. Poynton (Quart. Jour. Med., October, 1909). You conclude your annotation with the statement that since the histological picture of rheumatic carditis is considered to be specific, "a pathological study appears to be required for answering the question." May I remind you that Dr. Carey Coombs in his monograph on "Rheumatic Heart Disease" described the pathological changes found in the hearts of two patients dying from carditis following scarlet fever. "In both these children the cardiac lesions were precisely those of cardiac rheumatism. The inflammatory process was proliferative in type, and was distributed through the endocardium, pericardium, and myocardium; it arose in and around blood-vessels, and in the heart muscle it was concentrated into those highly characteristic foci the so-called 'submiliary nodules.'"—I am, Sir, yours faithfully,

C. BRUCE PERRY.
University Centre of Cardiac Research, General Hospital, Bristol, July 35th, 1933.

Mr. W. D. Bushell writes: "In the first paragraph of my letter entitled Poor Law Sick Wards, on p. 209 of your last issue, I suggest that three groups may each consist of 40,000 persons. I had intended to suggest that they were likely to consist of about 40,000, 80,000, and 80,000 persons respectively. My error, however, hardly affects my argument."

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Road and Rail Traffic: Hours and Conditions

IN the House of Commons on Wednesday, July 19th, the Road and Rail Traffic Bill, as amended in Standing Committee, was considered on report.

Mr. TOM SMITH moved a new clause providing that the references to hours for rest contained in Section 19 of the Road Traffic Act, 1930, should be deemed to mean hours for rest away from the vehicle. He said that obviously when the House of Commons agreed to Section 19 of the Act of 1930 they intended that ten consecutive hours of rest should be allowed to the driver of a vehicle, and in his opinion they certainly did not intend that the driver should sleep on the vehicle. The section had been evaded and violated, and in many cases completely ignored by certain employers.

Mr. KIRKWOOD seconded the new clause. If it was imperative that vehicles should be kept up to a certain standard it was even more necessary that the drivers should always be in a cool and calculating condition and not flurried, excited, or tired.

Sir F. SANDERSON urged the Minister to take some measures to cover the point raised in the clause.

Lieut.-Colonel HEADLAM, Parliamentary Secretary to the Ministry of Transport, said that everyone was anxious that the provision of ten consecutive hours of rest in a period of 24 hours calculated from the commencement of any period of driving should be enforced. But he thought that the law as it stood was effective if only it could be enforced. He had every reason to believe that this Bill would greatly facilitate the improvement of the conditions of drivers. When it was a condition of a licence that reasonable hours should be observed, and when a log book was kept recording the journeys made, bad owners who overworked their employees would be far less inclined to run the risk of being found out. In the circumstances he could not accept the clause.

After further debate,

Mr. OLIVER STANLEY, Minister of Transport, said that the clause as drafted was impossible, but there were possibilities along another line of making the rest period one during which the driver must be beyond the control of his employer. He would consider whether an amendment could be inserted in the Bill at a later stage to meet the point.

The new clause was withdrawn.

Mr. G. HALL moved a new clause providing that the driver of a goods vehicle should be specially licensed. He asked that this Bill should apply the same tests so far as goods vehicles were concerned as were applied to passenger vehicles under the Road Traffic Act of 1930.

Mr. LOVAT-FRASER supported the new clause.

Mr. OLIVER STANLEY said that in asking the House to reject the new clause he was not shutting out the possibility in the near future of legislation which would go beyond this proposal. A careful analysis was being made of the causes of fatal accidents, and some of the results would, he hoped, be published soon. At the end of this year he would examine the classification of these accidents, and then for the first time it would be possible to say whether any substantial proportion of them arose from the sort of mistakes on the part of drivers which could be corrected by making them pass a test before getting a licence.

The new clause was rejected by 268 votes to 38.

The report stage of the Bill was concluded.

On Friday, July 21st, the Bill was read the third time by 163 votes to 25.

Royal Assent

In the House of Lords on July 18th the Royal Assent was given to the Cancer Hospital (Free) Act.

On Thursday, July 20th, in the House of Lords the Local Government and Other Officers' Superannuation (Temporary Provisions) Bill was read a second time. The Manchester Royal Infirmary Bill was read the third time and passed.

In the House of Commons on Monday, July 24th, the Lords' amendments to the Manchester Royal Infirmary Bill were considered and agreed to. The Samaritan Free Hospital for Women Bill was read the third time.

In the House of Lords on Tuesday, July 25th, the Road Traffic (Compensation for Accidents) Bill as amended by a select committee passed through committee.

The Local Government and other Officers' Superannuation (Temporary Provisions) Bill also passed through committee and was read the third time and passed.

HOUSE OF COMMONS

THURSDAY, JULY 20TH

Health Insurance Benefits

Mr. LAWSON asked the Minister of Health if he was aware that large numbers of unemployed who were subject to the operation of the National Health Insurance and Contributory Pensions Act, 1932, were anxious as to what their position was under that Act, and that approved societies were not making the position plain; and whether he would inform those concerned, through the labour exchanges in conjunction with the Minister of Labour, what steps could be taken to ensure the continuance of benefits under the National Health Insurance Acts.—Sir E. HILTON YOUNG replied: A notice with regard to arrears due to unemployment is being sent to every insured person affected, and posters informing insured persons of their right to redeem arrears without waiting until they receive this notice are displayed in every employment exchange. Any insured persons who are unable to secure employment and do not exercise their right to continue as voluntary contributors will be informed by their societies of the date of cessation of their insurance.

Maternal Mortality

After a question by Mrs. Runge on the increase and distribution of maternal mortality, Mr. KIRKWOOD asked

the Minister of Health whether it was not the case, as stated in the *Daily Herald*, that maternal mortality is a standing disgrace to civilisation, and that this Government in making "cuts" will make conditions worse instead of making them better and alleviating the situation.

Sir E. HILTON YOUNG: No, Sir. That is an allegation which is absolutely without any foundation whatever in fact. I am delighted to be provided with this opportunity to give it the most categorical denial. (Cheers.) On the contrary, the constant policy of His Majesty's Government is to press ahead with the development of the maternal services.

Enamel Ware in Public Institutions

Mr. JOEL asked the Minister of Health whether the use of enamel ware was being officially discouraged for use in public institutions; and what was being recommended in its place.—Sir E. HILTON YOUNG replied: I have not thought it necessary to discourage the use of enamel ware in public institutions, but I have issued a general warning that now that the use of antimony in place of tin has become common in the manufacture of enamel glazes, enamelled hollow ware vessels obviously intended for other purposes may be dangerous if used for the preparation or storage of food and drink.

Lieut.-Commander AGNEW: Will my right hon. friend circularise local authorities with a view to more tin being used?

Colonel WEDGWOOD: No, more pottery.

Sir E. HILTON YOUNG: I have already circularised local authorities as to the danger of the misuse of enamel ware with antimony in the glaze, and I should hesitate to recommend preference for one or other form of substance.

Maternity and Child Welfare

Sir FRANCIS FREMANTLE asked the Minister of Health the numbers, respectively, of county councils, county borough councils, and other borough and district councils providing services under the Maternity and Child Welfare Act, 1918; and how many of such councils exercised the power to pay the midwife's fee in the case of necessitous mothers whose confinement took place in their own homes.—Sir E. HILTON YOUNG replied: The numbers asked for in the first part of the question are, for England and Wales, 61 county councils, 83 county borough councils, and 289 other borough and district councils. As regards the last part of the question, the latest information available to my department relates to the year 1932. At the end of that year 16 county councils, 43 county borough councils, and 46 other borough and district councils were exercising the power referred to.

Sir F. FREMANTLE: Is it not clear that the majority of local authorities are not exercising these most necessary and beneficent measures, and is it not a fact that the voluntary societies concerned have investigated this matter and have shown that it is largely due to the ignorance of these authorities of the fact that they have these powers, and will the right hon. gentleman see that they do know and exercise these necessary powers?

Sir E. HILTON YOUNG: I do not think that the deduction that the majority of local authorities are making inadequate use of these powers would be accurate.

Slum Clearance

Mr. MAXTON asked the Minister of Health if he could give figures, to the latest date, showing what progress had been made with his campaign against slums in the last 12 months.—Sir E. HILTON YOUNG replied: During the 12 months ended June 30th last local authorities in England and Wales submitted to the Minister resolutions declaring 406 areas, comprising 7443 houses, to be clearance areas; 293 clearance and compulsory purchase orders affecting 6910 houses were submitted for confirmation during this period, and 241 orders affecting 5582 houses were confirmed; in addition 362 houses were purchased by agreement.

MONDAY, JULY 24TH

Grants to Distressed Areas

Lieut.-Colonel SANDEMAN ALLEN asked the Minister of Health whether, when allocating the £500,000 to the distressed areas, he would take into account the number of displaced national health insurance contributors, owing to non-prolongation, and the consequential additional drain upon the poor-law authorities in the distressed areas.—Sir E. HILTON YOUNG replied: As indicated in the reply given on July 18th, the numbers of persons in the several areas who will cease to be insured under the National Health Insurance Acts at the end of the present year cannot be known for some time, but I have no reason to think that the introduction of this factor, if it were practicable, would have any material effect on the allocation of the grant.

Slum Clearance in Scotland

Mr. KIRKWOOD asked the Secretary of State for Scotland how many insanitary houses there were in Irvine; what was the officially estimated shortage of houses in the burgh; and, seeing that the Department of Health had ordered the town council to proceed with the building of 200 houses under the 1930 Act, what action would be taken by the Department of Health to compel this town council to fulfil its obligations with regard to rehousing.—Mr. SKELTON replied: Following upon the passing of the Act of 1930, the town council of Irvine estimated that the total number of houses needed, including houses required to replace houses unfit for human habitation, was 400. Since then the local authority have completed 188 houses and, as a result of the local inquiry which was held by order of the Department of Health, have resolved to proceed forthwith with the erection of 200 houses under the Act of 1930. A further statement regarding the housing position in the burgh will fall to be submitted by the town council at the end of the present year, and my right hon. friend will then be in a position to judge what further action, if any, is required on the part of the Department of Health.

Health Insurance and Medical Benefit

Mr. THORNE asked the Minister of Health the number of national health insured persons who had been deprived of sickness and maternity benefit since January last; whether such persons applied to public assistance committees for medical assistance; and, if so, whether they were subject to the means test.—Sir E. HILTON YOUNG replied: The number of persons who ceased to be entitled to cash benefits under the National Health Insurance Scheme on Dec. 31st, 1932, was approximately 70,000. These persons are still entitled to medical benefit under the Act.

Mr. THORNE asked the Minister of Health the total amount deducted from the contributions of national health insured persons per annum for the administrative costs of insurance committees and the cost of such committees per annum; whether there was a credit balance in this account and, if so, for what purpose the money was allocated; and whether he would consider the advisability of continuing medical benefit to unemployed insured persons from this fund.—Sir E. HILTON YOUNG replied: Under Section 2 of the National Health Insurance Act, 1926, a sum not exceeding 13*s.* per member per annum is payable by approved societies in respect of the provision of medical benefit, and out of this sum a sum not exceeding 6*d.* per member per annum is available for the administrative expenses of insurance committees. During the last few years the actual amount spent by insurance committees on administration has been slightly less than the product of the 6*d.* available, but in so far as the cost of the service is less than the maximum sum of 13*s.* per member, any such unexpended amount falls to be taken into account in determining the future charges to be made to approved societies. I have no power to utilise any such balance for the provision of medical benefit for persons who cease to be insured under the Acts.

The Indian Medical Service

Sir ERNEST GRAHAM-LITTLE asked the Secretary of State for India if he would reconsider the position with regard to pensions of officers in the Indian Medical Service arising from his declaration on March 7th, 1932, that the pensions of the officers of the Indian services were not guaranteed by the British Government, which nevertheless engaged and employed these officers; and if he would consider in this relation the precedent by which the salaries of the Secretary of State for India and of his

under-secretaries, although chargeable upon the revenues of India, were especially safeguarded by clauses in the Government of India Act, 1919, and Amendments, 1924, which provided that they might be paid out of moneys provided by Parliament.—Sir S. HOARE replied: All members of the regular Indian services, both military and civil, whether or not they hold H.M. commission, are in the same position as regards the payment of pensions in respect of their Indian service. The position is that these pensions have been in the past and are now charged to Indian revenues alone; and it is proposed that they should continue to be so charged under the new constitution. I can add nothing in this respect to the statement I made on March 7th, 1932. As regards the latter part of the question, the salaries of the Secretary of State and the Parliamentary Under-Secretary of State for India are not chargeable upon the revenues of India, but are a direct charge upon funds voted by Parliament. This change was made in 1919, not as a measure of safeguarding due payment, but because it was felt to be anomalous that the salaries of these Ministers, who are responsible to Parliament, should not be defrayed from moneys voted by Parliament.

TUESDAY, JULY 25TH

Pensions to Aged Miners

Mr. GODFREY NICHOLSON asked the Secretary for Mines whether he was aware that the Northumberland and Durham miners' permanent relief fund had been compelled to cease the payment of pensions to aged miners owing to the depressed state of the industry; and whether he would take steps to enable the Miners' Welfare Fund to make grants to this and similar funds.—Mr. ERNEST BROWN replied: The answer to the first part of the question is Yes. With regard to the second part, the Miners' Welfare Committee has been advised that such an object is not within the scope of the fund as at present constituted. Amending legislation would, therefore, be required to make grants for such a purpose permissible. My hon. friend is no doubt aware that the recent Departmental Committee of Inquiry into the Miners' Welfare Fund advised against the extension of the scope of the fund in this direction, both as a matter of principle and also on actuarial grounds, even if the output levy were to continue at the penny rate. As I announced last April, it has been decided to introduce a Bill at an early opportunity to reduce the amount of the levy to one halfpenny, and in those circumstances I cannot see any possibility of extending the scope of the fund to pension schemes.

Air Ambulance Service in Scotland

Mr. KIRKWOOD asked the Secretary of State for Scotland whether he had considered the communication sent to him from the Midland and Scottish Air Ferries, Limited, with regard to the proposal for an air ambulance service between the Western Isles and Glasgow for the conveyance of urgent cases to the city hospitals; if he was aware that the company were prepared to coöperate with the Department of Health and the St. Andrew's Ambulance Association in any scheme which would facilitate the removal of urgent cases to the hospitals; and if he would call a conference of the parties concerned with a view to the establishment of the service.—Mr. SKELTON, Under-Secretary of State for Scotland, replied: The answer to the first part of the question is in the affirmative. As regards the remainder of the question, the Department of Health propose to arrange a meeting with representatives of the Midland and Scottish Air Ferries, Limited, to discuss the experience which the company have already gained in operating an air ambulance service in the Highlands and Islands.

Death-rate in Slums and Healthy Areas

Mr. LOUIS SMITH asked the Minister of Health whether his attention had been called to the report of the medical officer of health for Stockton-on-Tees that the average death-rate of a population transferred from slum areas to new hygienic conditions showed an increase; and whether his department possessed information substantiating this conclusion or the reverse.

Mr. SHAKESPEARE, Parliamentary Secretary to the Ministry of Health, replied: This report has been fully considered, and as promised in his reply of May 11th my right hon. friend has caused inquiries to be made in other areas. These inquiries tend to show that the conditions reported in Stockton-on-Tees are exceptional. The experience in other towns where inquiries have been made shows that slum clearance and rehousing are normally associated with a substantial improvement in health, particularly in the case of children.

Housing in Liverpool

Mr. LOGAN asked the Minister of Health if he was aware that Liverpool needed at once 10,000 to 15,000 houses at an inclusive rental of 10*s*. to 12*s*. per week and 2000 additional houses per year; whether he had considered the resolution submitted to him of a conference of house builders at Liverpool repudiating the possibility of houses being built in that area at economical rents within the capacity of the working classes without reasonable revision of the restriction on density; and what action, if any, he intended to take in regard to restricting the density and assisting the Liverpool authorities to get out their own plans to meet the housing shortage.—Mr. SHAKESPEARE replied: My right hon. friend is aware of a press statement to the effect of the first part of this question. My right hon. friend has received a copy of the resolution referred to, and he is informing the city council that he is willing to consider any reasonable proposals on the subject of density they may think it desirable to submit to him.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Lt.-Comdr. (D) F. W. Paul is placed on the retd. list with the rank of Surg. Comdr. (D).

Surg. Comdr. A. G. McKee is placed on the retd. list at his own request.

The following appointment is notified: Surg. Lt. S. R. G. Pimm to *Pembroke*, for Chatham Hospital.

ROYAL NAVAL VOLUNTEER RESERVE

Proby. Surg. Lt. R. Cormack to be Surg. Lt.

ARMY MEDICAL SERVICES

Col. S. M. W. Meadows, late R.A.M.C., having attained the age for compulsory retirement, is placed on retd. pay.

Lt.-Col. J. H. Campbell, R.A.M.C., to be Col.

ROYAL ARMY MEDICAL CORPS

Maj. C. McQueen to be Lt.-Col.

RESERVE OF OFFICERS

Maj. M. F. Foulds, having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

TERRITORIAL ARMY

Capt. B. G. Scholefield, supern. for serv. with Univ. of Lond. Contgt. (Med. Unit), Sen. Div., O.T.C., resigns his commn.

Capt. W. J. C. Watt to be Maj.

Lt. M. Ellis is secd. under para. 135 T.A. Regs.

Lts. A. T. B. Dickson and W. W. Crawford to be Capts.

B. G. Maegraith and R. A. P. Gray to be Lts.

INDIAN MEDICAL SERVICE

Lt. E. M. Sewell to be Capt.

Lt. (on prob.) S. W. H. Askari to be Capt. (on prob.).

Capt. N. L. Sah relinquishes his temp. commn.

ROYAL AIR FORCE

Flying Offr. J. F. Ziegler is promoted to the rank of Flight Lt.

UNIVERSITY OF GLASGOW.—The University Court has appointed Dr. Donald McIntyre to the Royal Samaritan lectureship in gynæcology. Dr. McIntyre is surgeon to the Royal Samaritan Hospital for Women and the Royal Maternity and Women's Hospital.

MEDICAL NEWS

University of London

At a meeting of the Senate on July 19th Dr. Robert Alex. Webb was elected to the university chair of pathology tenable at the London School of Medicine for Women as from Oct. 1st, 1933.

Dr. Webb graduated as M.D. at Johns Hopkins University, Baltimore, in 1917, and took the English conjoint diploma in 1921. After experience as demonstrator in the University of Manchester he went to Cambridge, where he has been university lecturer in pathology since 1929. He holds the degree of Ph.D. Camb. His contributions to the pathological journals are chiefly in the field of immunology and anaphylaxis.

Dr. W. E. Herbert, since 1931 director of the department of conservative dental surgery at Guy's Hospital medical school, was appointed to a university readership in conservative dental surgery tenable at the school.

At recent examinations the following candidates were successful:—

M.S.

Branch I. (Surgery).—J. T. Fathi (University medal), London Hosp.; B. M. Fonseka, Middlesex Hosp.; and A. G. Harsant and S. J. Scurlock, London Hosp.

University of Wales

At recent examinations the following candidates were successful:—

M.D.

Rolf Ström-Olsen and J. M. Thomas.

M.CH.

T. G. I. James.

M.B., B.CH.

Dillwyn Evans, J. R. E. James, D. J. Jones, G. P. Jones, R. J. Phillips, Gwyneth P. Roberts, J. D. Spillane, H. A. Thomas, and Alice M. Williams.

Royal College of Physicians of Edinburgh

A quarterly meeting of the College was held on July 18th, with Dr. Robert Thin, the president, in the chair. Dr. Douglas Begbie McCrie Lothian (Larbert), Dr. Alfred David Gorman (Blackburn), and Dr. William Ritchie Russell (Edinburgh), were introduced and took their seats as Fellows.

Dr. John Fearby Campbell Haslam (Barbadoes), Dr. Eric Farquharson Dott (Edinburgh), Dr. William Leslie Burgess (Dundee), Dr. Sydney Alfred Smith (Edinburgh), and Dr. Ranald Malcolm Murray-Lyon (Edinburgh), were elected to the Fellowship.

University of Edinburgh

On July 19th the following degrees and diplomas were conferred:—

M.D.—•J. M. Anderson, J. le F. C. Burrow, ‡C. A. Calder, •I. A. G. L. Dick, †A. R. Gilchrist, George Gordon-Napier, May Gower, •D. P. Lambert, D. K. L. Lindsay, •J. P. M'Gibbon, •R. L. H. Minchin, Ruth M. Monro, William More, R. P. A. Rigg, C. K. Robertson, R. A. T. Rouse, Henry Shaffer, Dorothy M. Taylor, J. S. W. Westwater, and Jai Yunibandhu.

† Awarded Gold Medal for Thesis.
‡ Highly commended for Thesis.
• Commended for Thesis.

M.B., Ch.B.—• Mary E. Alexander, E. S. Amzalak, J. E. Armah, G. L. Ashford, A. H. Banks, C. C. Barclay, P. C. Barkla, • D. M. F. Batty, M. S. Behardien, • Alexander Brown, W. L. Brown, M. A. Byer, William Calder, Kenneth Cameron, J. R. Campbell, Hilda I. Carter, D. R. Cattanach, W. G. F. K. Chalmers, B. S. Chowdhury, M. J. Cochran, H. D. Conway, J. W. Crawford, J. H. Croom, P. H. Dalgleish, G. J. G. Davidson, D. N. Dobbie, T. E. Elliot, R. A. Elliott, G. D. Falconer, J. R. Forsyth, J. P. Gardiner, M. M. Ghosh, E. H. Gillespie, J. W. D. Goodall, C. L. Grant, F. S. Gregory, H. W. Hall, C. D. Hanham, G. V. Harry, F. D. Hart, J. L. Henderson, R. J. Henderson, Walter Henderson, F. J. C. Herrald, I. H. Hewetson, David Hittleman, Howard Hogan, D. R. Huggins, Margafet W. Jenkins, D. M. Keir, A. D. Latham, Edith Laurie, J. W. Leith, Lester Levingson, W. A. Liston, J. C. Lowe, Freda M. L. Lucas, G. B. Ludlam, G. R. Lunn, R. D. Lyon, D. D. Macdonald, B. F. Macfarlane, Alexander M'Gregor, W. M. M'Intyre, Ian S. MacKenzie, Neil Macmichael, Christina M'D. M'Taggart, Duncan Malloch, Joyce E. Marshall, S. H. Martin, W. R. Maxwell, Lilian W. May, E. W. Melvin, Mary F. Miller, R. G. Miller, Evelyn E. Mitchell, Robert Mitchell, Mary Moffett, W. A. Morton, D. L. Murray, Honora C. Osborn, T. S. Outerbridge, Marjory M. Pearson, R. S. Peill, J. B. Perrin, J. P. Philp, W. A. Ramsay, J. F. Rattray, R. W. Rattray, J. D. Reid, Isabella M'K. Robertson, Lucinda R. Roden, Lily C. Rossouw, G. A. Roulston, C. F. Roza, J. J. F. Russell, Winifred I. Russell, N. F. Sawers, Jack Saxton, J. G. Sclater, G. I. Scott, D. F. S. Shaw, J. A. W. Shearer, Alan Shelton-Agar, G. G. Sherriff, J. B. Shield, M. C. Stander, R. H. Stevenson, G. E. S. Stewart, A. D. Stoker, A. L. Stuart, Agnes B. Sutherland, Grace Sutor, Hon-fan Tai, H. P. Tait, Mary Tan, Kum-Swan Tay, A. W. S. Thompson, Alexander Thomson, Emily S. O. Thomson, Scott Thomson, D. J. Waterston, Mary Watson, A. V. Wells, G. D. Wight, T. I. Wilson, R. M. Young, Rasheed Zakariyya, M. S. Zan, and W. A. Moore.

• Passed with Honours.

D.P.H.—R. O. Cairns, A. J. Campbell, Lillie S. Dickson, H. P. S. Gillette, W. A. Gomes, A. R. Graham, Anna M. Herdman, I. O. Kennedy, F. M. Khan, Rosa Morrison, Roberta T. Rankin, Gurbuxsh Singh, Ruby J. B. Slater, O. E. R. Abhayaratne, Susannah S. Murdoch, E. J. Ratnayake, Nicodemus Wijeyesekera, and John Macqueen.

D.T.M. & H.—Minnie Gosden, D. P. Lambert, and A. R. Sikund.

Diploma in Psychiatry.—R. G. M'Innes.

Diploma in Radiology.—E. L. Godfrey and Georgina M. H. Somerville.

The following awards were made: Thesis gold medallist, A. R. Gilchrist, M.D.; Syme surgical fellowship, D. I. C. Finlayson, M.B.; Goodsir memorial fellowship, Robert Walmsley, M.B.; Freeland Barbour fellowship, R. J. Kellar, M.B.; Ettles Scholarship and Leslie gold medal, Alexander Brown, M.B.; Murchison memorial scholarship in clinical medicine, D. M. F. Batty, M.B., and Alexander Brown, M.B. (equal); Mouat scholarship in the practice of physic, Alexander Brown, M.B.; Buchanan scholarship in midwifery and gynæcology, B. F. Macfarlane, M.B.; James Scott scholarship in midwifery and gynæcology, D. M. F. Batty, M.B.; Beaney prize in anatomy and surgery, D. M. F. Batty, M.B.; Conan Doyle prize, Winifred I. Russell, M.B.; Annandale gold medal in clinical surgery, W. A. Liston, M.B.; Murdoch Brown Silver medal in clinical medicine, Alexander Brown, M.B.; Royal Victoria Hospital tuberculosis trust gold medal, Duncan Malloch, M.B.; Thomson memorial medal in child life and health, A. B. Wallace, M.B.; Scottish Association for Medical Education of Women prize, Mary E. Alexander, M.B.; Dorothy Gilfillan memorial prize, Agnes B. Sutherland, M.B.; Wightman prize in clinical medicine, R. J. Henderson, M.B.; Pattison prize in clinical surgery, J. G. Sclater, M.B.; Sir Robert Jones prize in orthopædic surgery, J. G. Sclater, M.B.

The Cameron prize in practical therapeutics has been awarded to Dr. G. F. Dick, professor of medicine in the University of Chicago, and Dr. Gladys H. Dick, in recognition of their discoveries regarding the ætiology, prophylaxis, and treatment of scarlet fever.

Manchester Royal Infirmary

The Old Residents' Club will hold a meeting and dinner on Oct. 7th. Further particulars may be had from the secretary of the club at the Manchester Royal Infirmary.

Royal Sanitary Institute

Mr. Stanley H. Badock, pro-chancellor and treasurer of the University of Bristol, will be the president of the next congress of this institute, which is to be held at Bristol from July 9th to 14th, 1934.

University of Birmingham

Dr. Henry Percy Gilding, has been appointed to the chair of physiology in succession to Prof. I. de B. Daly.

Dr. Gilding is at present senior lecturer in physiology at University College, London, and lecturer in clinical physiology at St. George's Hospital. He graduated in medicine at Oxford in 1927, having received his clinical education at St. Bartholomew's Hospital, where he was Kirke's scholar and gold medallist in clinical medicine. Subsequently he has worked at the Rockefeller Institute, New York, and published studies in tissue maintenance in the *Journal of Experimental Medicine*. He is assistant honorary secretary of the Physiological Society and editor of its *Proceedings*.

Dr. Keith Stewart Thompson has been appointed full-time lecturer in general pathology to dental students.

Royal College of Surgeons of Edinburgh

At a recent meeting of the College, Mr. J. W. Dowden, the president, in the chair, the following 26 successful candidates out of 77 entered, who passed the requisite examinations between March 16th and 25th, were admitted as Fellows:—

Ramiah Doraswamy Aiyar, M.R.C.S. Eng.; William John Brandon, M.B. Edin.; John McKenna Brewster, M.B. Glasg.; Richard Caldera, L.M.S. Ceylon Med. Coll.; William Harwood Carlisle, M.B. Sheff.; Hugh Carson, M.B. Q. U., Belf.; Henry Talbot Cox, M.B. Camb.; Amarendra Krishna Dev, M.B. Calcutta; Harold Stuart Evans, M.D. Univ. Manit ba; Adam Hamilton Harvie, M.B. N.Z.; Philip Cornelius Hogan, M.B. Adelaide; James Sneddon Jeffrey, M.B. Edin.; Robert Dudley Jones, M.B. Brist.; John Samuel Kessell, M.B. Adelaide; Gerrit Johannes Lamprecht, L.R.C.P. Edin.; Robert Gordon Butler Lusk, M.B. N.Z.; Ronald Graeme Macbeth, M.B. Oxf.; William Sommerville Mack, M.B. Glasg.; John Bernard Marinan, M.B. Q. U., Belf.; Arthur Alfonse Miller, M.R.C.S. Eng.; James Joseph O'Donoghue, M.R.C.S. Eng.; Alexander Noble Roxburgh, M.B. Edin.; Thomas Gilbert Scott, M.R.C.S. Eng.; Stephen John Scurlock, M.D. Lond.; Aloysius Daly Smith, M.B. Adelaide; and Neville Anthony Albert van Buuren, M.B. Lond.

University of Liverpool

Mr. Alexander Robertson, Ph.D., reader in biochemistry in the University of London, at the London School of Hygiene and Tropical Medicine, has been appointed to the Heath Harrison chair of organic chemistry.

Queen's University of Belfast

The John Dunville research fellowship in experimental pathology is offered to a registered medical practitioner of British nationality. Our advertisement columns contain further details.

University of Cambridge

Dr. G. L. Taylor, of Gonville and Caius College, has been elected to a further tenure of two years of the John Lucas Walker studentship for original research in pathology.

Application is invited for the George Henry Lewes studentship, tenable in the physiology school. Particulars will be found in our advertisement columns.

The British Pharmaceutical Conference

The banquet of this conference was held at Grosvenor House on July 25th, when Dr. C. H. Hampshire, the chairman, presided over an assembly of over 700. The toast of the Pharmaceutical Society of Great Britain was proposed by Mr. Douglas Hacking, M.P., Parliamentary Under-Secretary of State for the Home Department. Speaking of the Pharmacy and Poisons Act, he said he did not know whether his present audience would like him to boast of it or to apologise for it, but at any rate they would approve of Part I. of the Act. From the beginning of next year the Pharmaceutical Society would be a self-governing body with an organisation similar to that of the General Medical Council. He could not yet give the date when the provisions in the second part of the Act would come into operation, but arrangements for the Poisons Board were well in hand, and he hoped that the board would begin work in the autumn. Mr. John Keall, president of the Society, replied to the toast. He was glad that the difficulties in connexion with the Pharmacy and Poisons Act had been overcome, and that cordial relations existed between the Society and the Home Office. He referred to considerable changes in the educational policy of the Society and to its removal to new headquarters in Brunswick-square. The building would not be palatial but would be adapted to the present widespread activities of the Society. Prof. J. F. Thorpe, F.R.S., president of the Institute of Chemistry, in proposing the toast of the British Pharmaceutical Conference, said that pharmacy was closely linked to organic and to biochemistry—in fact, pharmacy could be termed applied biochemistry. He held out hopes not only that the nature of all the vitamins would be ascertained but that it would be possible to determine their structure and prepare them synthetically—perhaps even, as had been the case in synthetic preparations of other natural products—in a more suitable form for administration. Dr. C. H. Hampshire, in reply, said that in the 70 years of the existence of the conference much had been accomplished, and a tradition of useful service had been established. The scientific papers communicated to the conference year by year had been published in a series of year books on pharmacy which began in 1870. Research work communicated to the conference was, as a rule, of the kind directed to the solution of some practical scientific problem. The facts which are brought out were, so to speak, the bricks and mortar from which pharmacopœias and other authoritative works are built. The conference stood for what might be called the altruistic side of pharmaceutical life. It provided for and encouraged the science of pharmacy for its own sake. Lord Leverhulme, vice-chairman of the London committee, in proposing the guests, said that it was appropriate that the last conference of this year was one on pharmacy, which could be expected to provide tonics for jaded members before the holiday season. Dr. J. J. Hofman, president of the International Pharmaceutical Federation, spoke cordially of the welcome the foreign delegates had received and of their hopes of revisiting London when the next conference was held there ten years hence.

Scottish Conjoint Board

At recent examinations by the Board of the Royal Colleges of Physicians and Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow, the following candidates were successful :—

L.R.C.P., L.R.C.S., AND L.R.F.P. & S.

C. D. Campbell, F. G. Smith, Maurice Goldfar, R. A. F. Murdoch, W. McL. Mason, Joseph Selvam, R. S. Ninian, A. C. Stevenson, R. M. A. Ormston, Mutiullah Quazi, J. P. Perera, L. B. E. Seneviratne, Max Rosenberg, D. N. Schwartz, J. P. Carlile, E. M. Toloff, H. S. Cheetham, Oliver Springer, Kamal Khalil, E. T. Buell, Rambharat Singh, P. B. Menon, E. C. D. S. Ratnaike, J. L. Roche, and E. F. Dupre.

Developments at the Middlesex Hospital

On July 19th Prince Arthur of Connaught met the workmen, now numbering about 130, who are at present engaged on the reconstruction of this hospital, and thanked them for the care with which they have carried out their work. He explained that in 1932 when the west wing, the residents' block, the annexe (which will be the out-patient department of the future), the boiler house, the Courtauld Institute, and the new nurses' home were finished, the board decided to go on with the work and not only build the now completed Woolavington wing for which they had the funds, but also to start and build the east wing and crosspiece which they knew they had not enough money to finish. Now they had come to an end of their resources and unless further help was forthcoming they would have to stop. The hospital is hopeful, however, that the public will give this support, and this optimistic attitude has been encouraged by a recent gift of £25,000 from Mr. W. H. Collins, chairman of the Cerebos Salt Company, for the purpose of opening up the ground floor of the new east wing and for its establishment and equipment as an X ray diagnosis department. On the advice of the medical committee the hospital is taking this opportunity to separate the two departments of radiology—therapy and diagnosis—and it is proposed to invite an X ray diagnostician to take charge of the new department, while Dr. Douglas Webster will remain in charge of what will become the radiotherapy department. The final plans for the new department will await the approval and coöperation of the new physician in charge, but it is proposed that there be two gastro-intestinal rooms, a room for heavy X ray work, another for fracture cases, and others for examination of the chest, the heart, and the nasal accessory sinuses, for urological investigation, and for operative and dental work. There is also accommodation for a library, a medical officers' room, a waiting-room, a sisters' room, and an office.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 15TH, 1933

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 15 (last week 15); scarlet fever, 2065; diphtheria, 800; enteric fever, 54; acute pneumonia (primary or influenzal), 614; puerperal fever, 35; puerperal pyrexia, 101; cerebro-spinal fever, 21; acute poliomyelitis, 6; acute polio-encephalitis, 1; encephalitis lethargica, 12; dysentery, 8; and ophthalmia neonatorum, 78. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on July 18th–19th was as follows: Small-pox, 33 under treatment, 0 under observation (last week 36 and 7 respectively); scarlet fever, 2057; diphtheria, 1618; enteric fever, 16; measles, 528; whooping-cough, 388; puerperal fever, 28 (plus 12 babies); encephalitis lethargica, 254; poliomyelitis, 1; "other diseases," 219. At St. Margaret's Hospital there were 18 babies (plus 6 mothers) with ophthalmia neonatorum.

Deaths.—In 118 great towns, including London, there were no deaths from small-pox, 4 (3) from enteric fever, 15 (3) from measles, 7 (0) from scarlet fever, 16 (8) from whooping-cough, 19 (4) from diphtheria, 34 (10) from diarrhœa and enteritis under 2 years,

and 18 (2) from influenza. The figures in parentheses are those for London itself.

Newcastle-upon-Tyne reported the only death from enteric fever outside London. Measles was fatal in 4 cases at South Shields, and 3 at Liverpool. Four deaths from diphtheria occurred at Hull. Of the deaths from diarrhœa outside London, 8 were reported from Liverpool and 2 each from Manchester and Walsall.

The number of stillbirths notified during the week was 254 (corresponding to a rate of 39 per 1000 total births), including 34 in London.

Appointments

DAVIES, I. J., M.D., B.S., F.R.C.P. Lond., has been appointed Hon. Physician to the Cardiff Royal Infirmary.

EVANS, HORACE, M.D., M.R.C.P. Lond., Asst. Physician to the London Hospital, and Asst. Director of the Medical Unit.

STALLARD, H. B., Asst. Surgeon, Moorfields Eye Hospital.

Royal Samaritan Hospital for Women, Glasgow.—The following appointments have been made:—
CLEMENT, WILLIAM, M.B. Glasg., Assistant Surgeon.
MACKAY, WILLIAM GEORGE, M.B. Glasg., Assistant Surgeon.
ANDERSON, DAVID FYFE, M.B. Glasg., M.C.O.G., Dispensary Officer.
MACLENNAN, HECTOR ROSS, M.D. Glasg., Dispensary Officer

London County Council.—The following appointments to general hospitals are announced. A.M.O. (I)=assistant medical officer (Grade I).
DE LARGY, JOHN, M.B. Belf., A.M.O. (I), Paddington.
LEIPER, E. J. R., M.B. Aberd., A.M.O. (I), Hackney.
TWOHILL, JEREMIAH, M.B. N.U.I., Hquse Physician, St. Leonard's.

Certifying Surgeons under the Factory and Workshop Acts: HEPPER, J. E., L.R.C.P. Lond., M.R.C.S. (Brenchley, Kent); MELVILLE, C., M.B., Ch.B. Glasg. (Grangemouth, Stirling): and WILSON, R. E., M.B., B.Chir. Camb. (St. Albans, Herts).

Vacancies

For further information refer to the advertisement columns

Aberdeen, Kepplestone Nursing Home.—Radiologist for X Ray Dept.

Bagdad, Royal College of Medicine.—Six Professorships.

Banbury, Oxon, Horton General Hospital.—Res. M.O. At rate of £150.

Belfast, Queen's University.—John Dunville Research Fellowship in Experimental Pathology. £350–£500.

Blackburn Royal Infirmary.—Fourth H.S. £150.

Bristol General Hospital.—Jun. H.P. At rate of £80.

Bristol Royal Infirmary.—H.P.'s and H.S.'s to Special Depts. Each at rate of £80. Also Cas. O. At rate of £100.

Buxton, Devonshire Hospital.—Asst. H.P. At rate of £150.

Cambridge.—George Henry Lewes Studentship. £250.

Cardiff, King Edward VII. Welsh National Memorial Association.—Three half-time Asst. Tuber. O.'s. Each at rate of £250.

Cardiff, Welsh National School of Medicine.—Jun. Asst. in the Medical Unit. £250.

Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Assts. for Out-patient Dept.

Chester City Hospital.—Jun. Res. M.O. £150.

Colonial Medical Service.—M.O.'s in the West African Medical Staff. Each £660.

Coventry and Warwickshire Hospital.—H.S. £125.

Croydon General Hospital.—Cas. H.S. £125.

Dorchester, Dorset County Hospital.—H.S. At rate of £160.

Epsom U.D.C., &c.—M.O.H. £1000.

Evelina Hospital for Sick Children, Southwark, S.E.—H.S. At rate of £120.

Great Yarmouth General Hospital.—H.S. £140.

Greenwich Metropolitan Borough.—Tuber. O. for Council's Dispensary and Asst. M.O.H. £750.

Haslemere and District Hospital.—Res. M.O. At rate of £150.

Hastings, Royal East Sussex Hospital.—Sen. and Jun. H.S.'s At rate of £200 and £150 respectively. Also Hon. Asst. Surg.

Ilford, King George Hospital.—Asst. Ophth. Surgeon.

Ipswich, East Suffolk and Ipswich Hospital.—H.S. £120.

Leeds Education Committe — Asst. School M.O. £500.

Liverpool, David Lewis Northern Hospital.—Surgical Tutor and Registrar. £175.

Liverpool, Hahnemann Hospital, Hope-street.—Res. M.O. At rate of £125.

Liverpool Open-air Hospital for Children, Leasowe.—Jun. Res. M.O. £200.

Maidstone, Kent County Ophthalmic and Aural Hospital.—Ophth. H.S. At rate of £200.

Manchester, Ancoats Hospital.—H.S. At rate of £100.

Manchester, Northern Hospital, Park-place, Cheetham Hill-road.—Sen. and Jun. H.S.—£130 and £100 respectively.

Manchester, St. Mary's Hospitals.—H.S. for Whitworth Park Hospital.—At rate of £50.

Nottingham General Hospital.—H.S. At rate of £150.

Plymouth City Hospital.—Res. M.O. £350.

Portsmouth and Southern Counties Eye and Ear Hospital.—Anæsthetist.

Redhill, Surrey, Royal Earlswood Institution.—Jun. Asst. M.O. At rate of £250.

Richmond, Surrey, Royal Hospital.—Jun. H.S. At rate of £100.

Salford, Infectious Diseases Hospital.—Jun. Asst. Res. M.O. £200.

Salford Royal Hospital.—Hon. Asst. Radiologist.

Salisbury, General Infirmary.—H.P. and H.S. Each at rate of £150.

Sheffield, Jessop Hospital for Women.—H.S. At rate of £100.

Sheffield Royal Hospital.—Ophth. H.S. £120.

Shrewsbury, Royal Salop Infirmary.—Res. H.P. At rate of £160.

South Shields, Ingham Infirmary.—Sen. and Jun. H.S. £200 and £150 respectively.

Stockport Infirmary.—H.P. £150.

Tunbridge Wells and Counties General Hospital.—H.S. £160.

Virginia Water, Surrey, Holloway Sanatorium.—Jun. Asst. M.O. £350.

Wakefield, Middleton-in-Wharfedale Sanatorium.—Jun. Res. M.O. £250.

Wakefield, West Riding of Yorkshire Mental Hospitals Board.—Three Med. Supts. £1000–£1400.

Warrington, County Mental Hospital, Winwick. — Asst. M.O. £500.

Warrington Infirmary and Dispensary.—Jun. Res. Cas. O. At rate of £150.

Weir Hospital, Grove-road, Balham, S.W.—Jun. Res. M.O. £150.

Westminster Hospital, Broad Sanctuary, S.W.—Wander Scholarship in Diseases of Children. £250.

Wigan Royal Infirmary.—H.S. At rate of £150.

Willesden General Hospital, Harlesden-road, N.W.—Res. Cas. O. At rate of £100.

Winchester, Royal Hampshire County Hospital.—H.S. At rate of £125.

Wolverhampton Royal Hospital.—H.S. At rate of £100.

Births, Marriages, and Deaths

BIRTHS

PETRIE.—On July 18th, at Hundred Acres, Sutton, Surrey, the wife of Dr. A. A. W. Petrie, of a son.

REDMOND.—On July 15th, at Devonshire-place, W., the wife of Dr. Aidan Redmond, of Dudley House, Wallington, of a daughter.

MARRIAGES

GARROW—NEWLANDS.—On July 20th, at St. Andrew's Church, Frognal, Hampstead, Alexander Garrow, L.D.S., R.C.S. D.D.S., to Annie Grant (Nancy), second daughter of Mr. Alex Newlands, C.B.E., and Mrs. Newlands, Canfield-gardens, Hampstead.

HERBERT—CLOGG.—On July 22nd, at the Methodist Church, Upper Norwood, Walter Elmes Herbert, M.R.C.S., L.R.C.P., L.D.S., to Joyce Mary Griffith Clogg, M.B., B.S., elder daughter of Mr. and Mrs. Arthur H. Clogg, Rockmount, Upper Norwood.

DEATHS

WOOD.—On July 23rd, at The Laurels, Creswell, near Mansfield, William Thomas Wood, L.R.C.P. and S. (Edin.), Knight of Grace of the Order of St. John.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

ALBANY DEPTFORD BABIES' HOSPITAL.—The Duchess of York recently opened the large house in Breakespeare-road, Brockley, to which this hospital has been removed. The institution was founded by the late Duchess of Albany in two houses, probably 200 years old, in one of the poorest parts of Deptford. These houses were formerly occupied mainly by naval officers, and according to tradition one of them was rented by Nelson. The new house stands in a large garden in an open situation with abundant room for extension. There are three wards with a total of 18 beds, an isolation ward, and a large room for nursing mothers; an out-patients' department has been built in the garden. The total cost has been £7,000, of which £1500 remains to be raised.

NOTES, COMMENTS, AND ABSTRACTS

PHARMACY IN RETROSPECT AND PROSPECT*

BY C. H. HAMPSHIRE, M.B. LOND., F.I.C., PH.C.

Dr. Hampshire said that it was an established custom to hold the British Pharmaceutical Conference in London every ten years, when it became the chairman's duty to review general pharmaceutical progress during the previous decade. The most striking change, he said, over the last ten years had been the reduction in the number of vegetable products used as drugs, the laboratory rather than the vegetable kingdom being drawn upon. Of the crude drugs contained in the British Pharmacopœia, 1914, 60 had been now excluded, with the intention to reduce the number of drugs in employment having similar active principles or therapeutic purposes, but, he added, this tendency in therapeutics made it necessary to consider carefully the type of work for which the pharmacist of the future must be trained, for he must now be less of a botanist and more of a biologist, a knowledge of bacteriology and of the physiology of animal processes being demanded. The steps taken by the Pharmaceutical Society to adjust the education of the pharmacist to the changed basis of materia medica, and the facilities now afforded for the study of microbiology and of biological chemistry, would, he held, bear valuable fruit later, while the indications of changes in the educational requirements of pharmacists were showing great foresight.

Therapeutic Substances Act

Of this Act the chairman said: "The Act was passed in 1925 to provide for the regulation of the manufacture, sale, and importation of therapeutic substances, the purity or potency of which cannot be adequately tested by chemical means. The substances to which the Act applies include: vaccines, serums, toxins, antitoxins, and antigens; insulin, pituitary (posterior lobe) extract; certain organic arsenical compounds; and sterilised ligature and suture material. In accordance with this Act an authority was set up under the Ministry of Health to make regulations prescribing the standards and methods of biological testing to be applied to these substances. The duties of preparing and keeping standard materials and of carrying out control tests are entrusted to the National Institute of Medical Research. This Institute not only maintains the standards for this country, but has charge also of the International Standards prepared in accordance with agreements reached by the Health Organisation of the League of Nations. It is scarcely necessary to point out the advantage of having a common unit and a common standard for all countries, in relation to important remedies such as insulin. The Institute has also undertaken, at the request of the General Medical Council, the charge of the standard materials required for the biological testing of digitalis and strophanthus and their preparations which are not included in the Therapeutic Substances Regulations, but are described in the British Pharmacopœia, 1932. The International Standards for vitamin testing are also kept at the Institute. The Therapeutic Substances Act applies to Great Britain and Northern Ireland; similar descriptions of most of the substances described in the Regulations are given in the British Pharmacopœia, in order to provide standards in other parts of the British Empire in which the Pharmacopœia is the legal authority. The Permanent Commission on Biological Standardisation appointed by the Health Organisation of the League of Nations is another body which exercises indirectly an influence on pharmacy. The decisions of this Commission as to the general principles of standardisation, the drugs to be standardised, the units to be adopted, and the standard material to be employed affect profoundly the materials which the pharmacist has to handle. Other activities of the Health Organisation which may be mentioned as bearing on pharmacy are the Malaria Commission, which has defined standards for the preparation of the alkaloids of cinchona known as totaquina, and the Commission of Experts which is at present engaged in investigating the various processes for the assay of morphine in opium and its preparations, and of cocaine in coca leaves and crude cocaine, with a view to defining international standard methods."

Therapeutic Trials Committee

In allusion to this committee, which was formed by the Medical Research Council in 1931, the chairman defined its object as being to supply manufacturers with clinical reports on new therapeutic agents which they are preparing to place on the market. He said: "Anyone accustomed to read continental medical and technical literature must notice the frequency with which pharmacological and clinical reports regarding the new products put out by private firms appear. In this country it is much more difficult, for reasons which are well understood, to secure for publication clinical reports on privately owned remedies, and the British manufacturer is consequently at a disadvantage. The committee removes that disadvantage, and by reason of its impartial standing strengthens the claims of any remedy of which it approves. The committee acts at the request of the manufacturer, who is required to submit with his product all available information regarding it. If the substance appears likely to be a useful remedy supplies are distributed to a number of clinicians in different parts of the country, and in accordance with the reports received, the manufacturer is advised whether the product is of value or not. If the remedy is approved the committee supply clinical reports which the manufacturer may use for the purpose of introducing his product. On the other hand the committee may refuse to deal with any product if the description and statements supplied by the manufacturers make it seem that the product is not likely to be worth investigating. In the event of a product being tried and reported upon unfavourably the manufacturer is advised not to proceed, and the committee reserve the right to publish the reports. Dr. Chassar Moir's investigation upon ergotoxine ethanesulphonate and Dr. E. J. Wayne's clinical trials of digitalis glucosides are the only subjects, so far as I am aware, to be reported upon for publication up to the present. This does not represent, however, all the ground covered. It is in the nature of things that the best work done by such a committee, that is, the investigations in relation to the drugs which eventually are reported upon unfavourably, will not be made public. I describe this as the best work, since a careful and comprehensive opinion on a product will benefit the public and the medical profession by keeping off the market valueless drugs which might otherwise be brought into use on insufficient evidence, and will save the manufacturer the expense and effort of launching an article which is destined ultimately to be unsuccessful. A good product, on the other hand, would be expected, in any case, eventually to gain acceptance, though the favourable report of an impartial committee of a public body will be a great advantage to the British manufacturer in marketing his remedy."

The British Pharmacopœia, 1932

Dr. Hampshire described the formation of the Pharmacopœia Commission, the result of the acceptance by the General Medical Council of the recommendations of the Committee of Civil Research. The new Pharmacopœia was produced in September, 1932, and he alluded briefly to the general satisfaction with which it had been received, and commented

* Abstract of the chairman's address at the British Pharmaceutical Conference, London, July 24th–28th.

upon the fact that during the past decade pharmacopœias of Italy, Holland, Belgium, Spain, Denmark, and Rumania had been revised, while new pharmacopœias are also in preparation in Switzerland and Austria, and revision is proceeding in the United States.

The Ergot Problem

Dr. Hampshire dealt at some length with the ergot problem. He said that ten years ago it was accepted that the work of Barger, Carr, and Dale had established ergotoxine as the alkaloid which gave to ergot its characteristic activity. The observations of Chassar Moir on the effect of ergot in human patients, however, made by a new method of graphical recording of the uterine contractions, revealed unexpected results. Moir stated that the effect of ergot taken by the mouth was to induce with remarkable rapidity strong uterine contractions, which, however, lasted only for a limited time. This was in contrast to the known effect of ergotoxine, the effect of which is much slower in beginning and lasts for a much longer time. Moir concluded that there must be in ergot some principle not previously identified. Tests of ergot preparations of the British Pharmacopœia, 1914, by this method showed them to possess the activity ascribed to this unknown constituent. Fortunately the liquid extract of the British Pharmacopœia, 1932, was also found to possess this effect in about the same degree. "The next step," said Dr. Hampshire, "should be the separation and identification of the principle to which the action demonstrated by Moir is due. A decision is then required from the clinician as to the type of action for which ergot is to be used. Is the action to be quick in inception and comparatively short in duration, or is the effect desired that of ergotoxine, which is slower in beginning and longer in duration? With these questions answered and the basis of standardisation settled it should then be possible to place the chemical assay of ergot on a sound basis. Meanwhile the preparations of the Pharmacopœia provide the means of administering ergot in forms which have been standardised with respect to ergotoxine, a substance which has a definite action, and the position is thus considerably advanced as compared with that of ten years ago."

The Standardisation of Digitalis

Dr. Hampshire described the researches which had made it possible to have in the present Pharmacopœia standard forms of digitalis ordinarily used by the physician for administration by the mouth, but added that the question of providing a preparation for injection is much more difficult, as many of the substances sold as the active principles of digitalis are mixtures of indefinite composition. In these circumstances when the administration of a drug of the digitalis group is required the physician ordinarily has recourse to strophanthin.

Vitamin D

Dr. Hampshire disclaimed any attempt to set out the present position of vitamins in their biological, chemical, and therapeutic aspects fully, while he added that the question of standardisation had been fully dealt with by the Health Organisation of the League of Nations. He defined the vitamins, however, in terms of what may be expected from them in the treatment of deficiency disease, and of vitamin D said as follows: "Vitamin D, the fat-soluble antirachitic vitamin, attracted attention early in the development of the subject of accessory factors by reason of its occurrence in cod-liver oil, the typical antirachitic remedy. The principal advances in relation to vitamin D arose from the discovery that this material could be produced synthetically. The occurrence of this substance in a large variety of materials has been the subject of wide investigations, and the biological methods of determination have been brought to a high degree of development as the result of very extensive researches. The principal appeal to us, however, will be made by the discoveries on the chemical side. Two fundamental facts in relation to the chemistry of vitamin D were the discovery that sunlight or ultra-violet light brings about a cure of rickets and that antirachitic properties could be produced in fatty foods of various kinds by exposure to ultra-violet rays. The nature of the change taking place in food materials when thus irradiated was naturally a subject of great interest. The simplest explanation assumed the presence in these materials of a substance which was changed by the chemical action of the rays into vitamin D. This substance was eventually identified as ergosterol, a sterol having the formula $C_{28}H_{44}O$, which is a constituent of yeast, of ergot, and of many fatty foods. Ergosterol is a constituent of the skin, and many of the benefits of exposure of the skin to sunlight are consequent upon the conversion of ergosterol into vitamin D and the absorption of the vitamin into the system. The constitution of ergosterol is not yet fully worked out, but some progress has been made and a number of derivatives and isomers have been isolated. The principal interest centres round the methods of irradiation, which have now been developed to the extent that it was found possible to include in the British Pharmacopœia, 1932, under the name liquor ergosterolis irradiati, a solution in oil of an antirachitic principle, probably identical with the vitamin D in cod-liver oil. The solution is standardised by a biological method to contain in 1 g. 3000 units of antirachitic activity. The Pharmacopœia accepts the International unit and suggests procedures for carrying out a curative or a prophylactic method of assay, either of which may be used. In the earlier drafts of the Pharmacopœia, the preparation by irradiation of a solution of purified ergosterol in oil was described, but shortly before the Pharmacopœia was completed the isolation of pure vitamin D was announced, and it was possible to make the monograph in the completed Pharmacopœia include the alternative method of preparing the solution by dissolving the purified antirachitic principle in the vehicle. The actual vitamin D, which has been named calciferol, was isolated as the result of a series of researches by a team of workers at the National Institute for Medical Research. It may be obtained in the form of its 3:5-dinitrobenzoate either from the crystalline material which irradiated ergosterol yields on fractional sublimation at low pressures, or directly from the irradiation product of ergosterol. The active substance was also isolated almost at the same time by Windaus in Germany. Calciferol is now a commercial article prepared by the process worked out at the National Institute for Medical Research. In this process ergosterol is irradiated in an organic solvent, the solvent and unchanged ergosterol are removed, and the so-called active resin which remains is esterified with dinitrobenzoyl chloride. The dinitrobenzoate on hydrolysis yields calciferol, which is considered to be an isomer, and probably a stereoisomer, of ergosterol but without water of crystallisation. When pure it is perfectly white, but quickly turns yellow and ultimately brown in contact with air, more especially if powdered or heated. The melting-point, optical rotation data, colour reactions, and other chemical and physical properties have been fully worked out. The biological activity is not less than 40,000,000 units per gramme. The International standard recommended for the assay of vitamin D is the standard solution of irradiated ergosterol issued from the National Institute for Medical Research, and the unit is the activity of 1 mg. of this solution."

Animal Substances: the Sex Hormones

In the section of the address devoted to the pharmaceutical employment of animal substances in the treatment of disease, after reference to the value of insulin, liver and pituitary extracts, thyroxine and adrenaline, he alluded to the recent researches on sex hormones. "Researches," he said, "have been made in recent years on the occurrence of hormones which

produce œstrus, and as a result considerable knowledge of the chemistry of the active hormones has been gathered. Two main substances are described, keto-hydroxy-œstrin, a white crystalline solid, melting at 254° C., and having the empirical formula $C_{18}H_{22}O_2$, and the closely allied trihydroxy-œstrin. These substances, which may be obtained from the urine of pregnant animals, have been tried in the indefinite and difficult group of maladies with which the gynæcologist has to deal, and their position as remedies must perhaps be left undecided for the present. It is significant, however, that the Permanent Commission on Biological Standardisation has thought it worth while to set up an international standard and to define an international unit. The standard is a quantity of keto-hydroxy-œstrin kept at the National Institute for Medical Research, and the unit of activity is defined as the specific œstrus-producing activity contained in 0·0001 mg. of this standard preparation. It is interesting also to note the relation of these hormones, which have seemed hitherto to be typically animal products, to the vegetable kingdom. Œstrus-producing preparations have been made from germinating grain, and also from peat, coal, petroleum and bituminous material. The hormone has been shown also to influence the growth of certain plants, including hyacinths and lilies of the valley, which come to flower more quickly when small quantities of sex hormone are supplied to them. Of great interest also is the recent discovery that auxin, a plant growth-promoting hormone isolated from the heads of the shoots of maize or barley, occurs in the urine of warm-blooded animals. The male sex hormone has also been isolated and has been assigned the formula $C_{19}H_{28}O_2$. It is an oxyketone and a secondary alcohol."

The Need for Research

After reviewing the action of the new drugs appearing during the decade and of the pharmaceutical research work on galenicals, he concluded as follows: "An effect created in the mind of one who has been concerned in the preparation of the new Pharmacopœia is a feeling of surprise at the very considerable gaps which exist in pharmaceutical knowledge and at the number of subjects upon which precise information is lacking. There is need for much investigation even of some of those well-established drugs which are considered worthy of inclusion in the Pharmacopœia. One may hazard the guess that with the publication of the new British Pharmaceutical Codex a similar group of unsolved problems will become evident. This, to my mind, is the chief justification for the existence of this Conference, which has always been the principal medium for the publication of pharmaceutical research in this country. It is hoped that the Conference Research List which is published annually will stimulate the interest of pharmaceutical workers and will be the means of initiating research on those subjects which are specially connected with pharmacy. The future of this Conference and its continuation as a useful body in the national life will rest principally upon its reputation as a means for the publication of scientific research in pharmacy, and for the discussion of technical problems. It is more necessary now than ever before that pharmacists should keep abreast of the scientific side of their work if pharmacy is to keep its place. In proportion as they do this so will the standing of their calling and its recognition by others be increased. The success of pharmacy in the future will depend upon the fitness of the individual to carry out in a worthy manner the duties entrusted to him by the community."

THE BRIDGE OF ALLAN CONFERENCE.—Sir Henry Lunn writes to correct a misapprehension which has arisen in connexion with the medical conference held at Bridge of Allan on May 20th (see THE LANCET, May 27th, p. 1154). The subject of discussion was Rational Dietetics, not Modified Fasting and Dietetics. This latter title was used in error in certain press notices referring to the conference.

BRISKIES

THIS is a flaked cereal breakfast food supplied by the Thames Milling Co., Ltd., Erith, Kent. The material is made from the whole wheat which is cooked during manufacture in milk in place of steam. The manufacturers state that the milk employed is previously soured by inoculation with *Bacillus bulgaricus* in order to get as high a percentage as possible of lactic acid in the milk for the purpose of splitting up the starch in the wheat. They believe that such a process makes the flakes more nourishing and digestible. On analysis the following results were obtained:—

	Per cent.
Moisture	4·0
Total mineral matter	1·96
Fat	1·60
Protein (N × 6·25)	12·5
Matter soluble in cold water	15·7
Water soluble reducing sugar (as dextrose)	1·66
Crude fibre	1·8
Soluble acid (as lactic)	0·34
Assimilable carbohydrates (starch and hydrolysed starch)	78·14
Calories per lb.	1753

A microscopic examination showed that the wheat starch had been very considerably transformed by the cooking process to which it had been subjected, and this is further borne out by the relatively large amount of the material which is soluble in cold water. This treatment would increase digestibility, while the food possesses the great asset of a pleasant flavour. The presence of milk in the finished product enhances the food value, and no added preservatives, flavouring or colouring materials were detected.

THE DESOUTTER ARTIFICIAL LEG

A NEW artificial leg for above-knee amputations has been demonstrated to us by a wearer of the appliance. The limb is the invention of Mr. Charles Desoutter, of the firm of Desoutter Bros., and appears to mark a real advance in prosthetics. A new system of construction has been used, the limb being made from seamless pressings, solid-drawn from a flat sheet of "alclad," a trade name for duralumin coated with pure aluminium. The shin from the knee to the ankle is of one piece, and the thigh from the knee to the crutch also consists of one seamless pressing, and the result is an apparatus which combines strength with remarkable lightness (Fig. 1). The limb only weighs 3½ to 4 lb.

To the orthopædist the point of greatest interest is the knee-mechanism, which so controls the swinging speed and action of the joint as to make the walking natural. The loose and pendulous swing, which is a notable feature of a heavy artificial limb, was absent from the gait of the one-legged man who paraded before us; he was an above-knee amputee with a stump approximately 9½ inches long. The half bending jerky knee action typical of the knee control of many of the artificial limbs that found their way on the market after the war was entirely absent.

A notched control wheel is sunk flush in the knee and is easily rotated with slight thumb pressure through the clothing. The shape and natural appearance of the appliance are due to the absence of outside straps and elastics, the pelvic band affording sufficient support. The wearer during the demonstration first walked with the knee control out of action, when the artificial nature of his limb was obvious; but on turning the control wheel his gait became natural, while he said that he could now walk much faster (see Fig. 2). The mechanism by which this is effected is clear from the detailed illustration. The easy action has been arrived at by mounting the wheel on a minute ball-bearing thrust race. The spring is a sort of artificial quadriceps, and the action gradually weakens as the leg flexes, becoming neutral in the sitting position (see Fig. 3).

A film in slow motion prepared by the firm shows

FIGS. 1 2 3

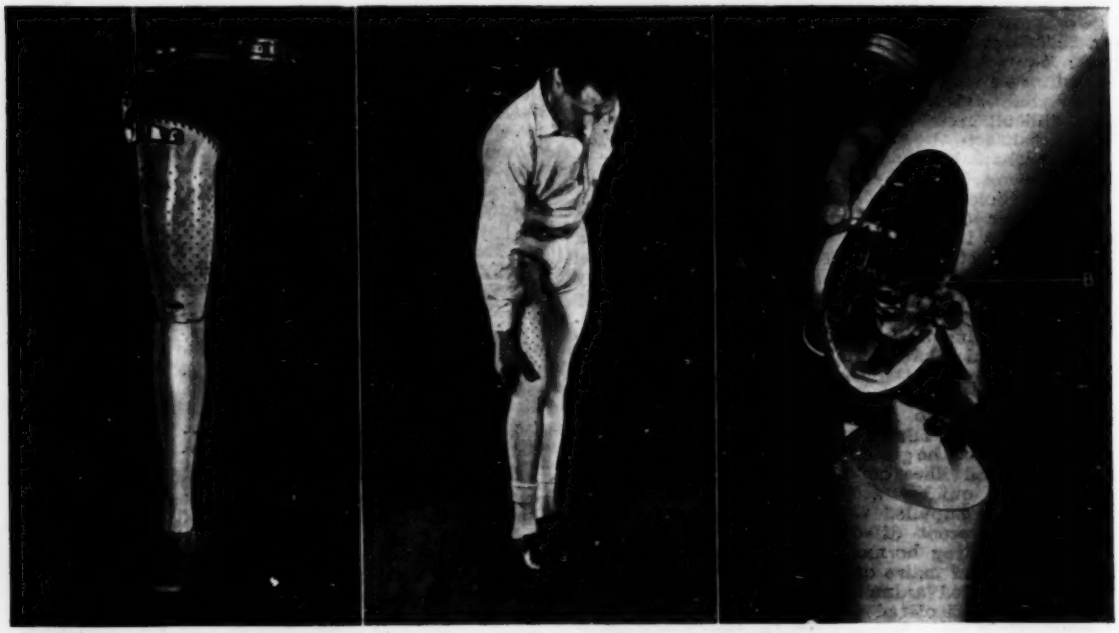

FIG. 1.—The smooth outline is the result of construction by seamless pressings.

FIG. 2.—The wearer rotating the notched control wheel. This easy action has been arrived at by mounting the wheel on a minute ball-bearing thrust race.

FIG. 3.—Half-section of knee, exposing construction. (A) control wheel; (B) high duty compound ball-bearing knee-joint made from Kayser Ellison oil-hardening steel; (C) return spring.

well the leg action of a normal person walking, and discloses that in taking a step forward with natural gait the leg starts its bend and swing comparatively slowly, not rising high from the ground. But in coming forward acceleration occurs until the step is complete. In this film two men are shown walking side by side, one of whom has two legs, while the other has lost a leg above the knee. It needs an expert eye to discern any difference.

THE REDUCTION OF NOISE IN BUILDINGS

IT is unfortunate that in measure with the increase of mechanical noise in daily life building generally has become less substantial, and on account of its monolithic structure, very much more susceptible to the easy transmission of all sorts of noises. The architects of reinforced concrete and steel-framed buildings are, in fact, hard put to devise means of preventing the entry of street noises on the one hand, or the passage of internal noises over the fabric of their buildings on the other; and since constant noise has an irritating effect upon our nervous systems, quietness in homes, offices, and hospitals acquires a special value. Actually architects have been working a good deal in ignorance, lacking means of measuring noise scientifically or of combating it with scientifically tested materials. It is here that the Department of Scientific and Industrial Research and its building research station at Watford, ready to turn a trained staff on to the laborious work of testing all sorts of usable materials for their acoustic properties, can offer sound practical advice. In a recent bulletin [1] the department covers the field of design with great thoroughness, completing a general exposition of the designer's approach to the subject with a table of materials and constructions listed according to their sound reduction values. In case false hopes should be raised at the outset they hasten to state that "very few of the special partitions when isolated and tested under laboratory conditions . . . show themselves to be equal in efficiency to a 9-inch brick wall."

[1] Bulletin No. 14 of the Building Research Board. H.M. Stationery Office. 9*d*.

NEW PREPARATIONS

DETTOL.—Reckitt and Sons, Ltd., are introducing a new germicide known as Dettol. Scientific data submitted establish that dettol is an efficient germicide—it has a Rideal-Walker coefficient of 3·0—and that in addition it is non-toxic and non-irritant. It has a pleasant smell and is non-staining. Dettol is a halogen derivative of xylenol dissolved in a mixture of aromatic essential oils. On account of its non-corrosive and non-toxic qualities, the claim is made that it can be used undiluted for the sterilisation of the hands and skin (especially as regards hæmolytic streptococci). These qualities should make it of particular value in midwifery. A cream, containing 30 per cent. of dettol, has been prepared for certain obstetrical purposes. Dettol forms an emulsion with water, but to meet the needs of surgeons who prefer a clear solution for the sterilisation of instruments another preparation known as Dettol Soluble is available. This has a Rideal-Walker coefficient of 2·5, and laboratory tests suggest that it is not less potent as a germicide than the emulsion. Dettol is obtainable from the main London medical suppliers and chemists, and a free sample for trial will be sent on direct request to Reckitt and Sons, Ltd., Hull.

MEDICAL APPOINTMENTS IN IRAQ.—In our advertisement columns this week it is announced that six appointments will shortly be made at the Royal College of Medicine in Bagdad. Application is invited for the chairs of epidemiology and public health, anatomy, biology, materia medica, mental diseases (including neurology), and gynæcology. Lectures are given in English, and the new professors will take up their duties in October.